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Address

THE SCOPE OF PREVENTIVE MEDICINE

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH OF THE AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, 1909.

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NEW ORLEANS

There is—there can be—no higher specialty in medicine than that for which this Section stands, and we must present this to the public in such unmistakable terms that full recognition shall be accorded both to the sanitarian and to the profession as a whole, for neither can stand alone, as I hope presently to show. It is sheer waste of ability and time for the members of this Section to tell each other what they already know, and even the general distribution of new matter by the pioneers of the Section can not, in the nature of things, be so broadly useful as the same character of work would be, and is, in our truly great medical Section. Our greatest function, it seems to me, lies in the fact that we are the connecting link between that great medical body which handles the vast majority of the diseases we would prevent and the general public, the victim of those diseases.

This being an undisputed fact, we should have in mind constantly the two duties which follow this fact as naturally as the day follows the night. We must impress on the public the vast import to them of preventive medicine; we must show them that health means wealth and happiness, to the first very frequently and to the last always a necessary adjuvant.

In last year's Address on Medicine Dr. Thayer very properly said that but for sanitation there could be no Panama Canal: and is it not equally a fact that but for the incessant labor of men poorly paid, or paid not at all, every aggregation of people calling itself a city, even in the temperate zone, would be a focus of endemic disease, and cities of a million inhabitants unspeakable pest-holes, while such as New York, London, Paris, Berlin could not exist?

So much for the value to mankind of our work. These facts are reasons strong enough to justify us, and we shall continue to push forward, always seeking better results, whether recognized or not, content to serve our people as best we may, leaving our reward to their own sense of justice—and oh, the pity of it!—to be so often rewarded by abuse.

We should, for the better advancement of our work, make every possible effort to place the utilitarian aspect of that work before our law-makers and insist that they at least appropriate as much for the protection of their wives and little ones as for that of their swine, cattle and poultry. They might justly have claimed in the past that we had not shown ability to protect them, but this can not be said now.

It is something more than accident that last year Burrell and Thayer in the general orations and Drs. Edsall, Evans, Hurty and others advocated a campaign of education of our people. Such coincidence of thought means that we are ourselves awake and shall awaken our people to their duty to themselves and shall make it plain to them that no man has a right so to keep his house or so to live his life in a civilized community as to jeopardize his neighbor's health or happiness. It means that *we* shall teach all our people that the duty of keeping clean in a physical sense is as high as that of moral cleanliness and a prerequisite to a justified claim of "civis Americanus sum."

The practitioner of medicine saves lives one at a time, and right noble is his calling. You save lives by thousands. Is it not infinitely wiser to prevent the pollution by sewage of a stream supplying a city of a million than to fight that pollution in the bodies of 10,000 innocent victims of filth, or even to attempt the repurification of 100,000,000 gallons of that filth-laden water every day? Is it not better far to prevent the pollution of our food, houses, vehicles and streets by tuberculosis than to spend millions on treatment and then see our loved ones die by tens of thousands?

Is it not cheaper to spend a hundred millions of dollars and rid our country of every anopheles and stegomyia than to see business wither at flood-tide under the blighting grip of yellow fever, and our kindred and friends perish from the pest, while malaria takes its yearly tribute of thousands of lives in our country and destroys earning power to the extent of probably $50,000,000 annually and perhaps double that?

Shall we not vaccinate all our people at a cost of 25 cents each rather than leave some hundreds to die annually and some other hundreds of thousands to be branded with scars, a living shame to the community?

All these things we must bring forcibly and clearly before our people, and to do this we must cultivate our relations with the family physicians. They are closer to the people than we can ever be, and if we arouse their activities we will assure our ends. We must keep in close touch with them, and, indeed, we should enlist as many of them in this Section as possible, because without their help we can do nothing, and without the presence of some of their brightest and best, which, I am thankful to say, we have, at these meetings, we can not keep in as intimate association with them as we must. Fortunately, many of these able men

are directly interested in sanitary science and are part and parcel of this Section, thus giving us the very opportunity we seek and should gratefully embrace to further arouse their interest to create an epidemic of sanitary enthusiasm on their part.

We must enlist the interest of our brethren, the pediatrists and the internists and get them to see and know the pitfalls in the path of the women and children under their care. We must lead them to take enough interest to play the part which a good old gentleman of the old school contemptuously called "dry nurse to the family."

We must start with the little ones, and, after seeing that their mothers are instructed in the hygiene of food and clothing, remove the notion that the children must of necessity have measles, whooping-cough, etc., and the sooner the better, by showing them that these diseases are ideal foundations on which to build future woe in the shape of tuberculosis.

We must teach parents that the sanest weapon with which to fight tuberculosis in their offspring is a good, sound body in which every atom of resisting power is developed by robust health to its maximum efficiency, that the development of the child's physical well-being is as sacred a duty as the development of its mind or morals, and is indeed the only proper foundation for intellectual vigor; that the boy whom they fain would bring up to be the grand man of the future must have sound lungs, stomach, eyes, teeth, etc., and good muscular development to enable him to meet his competitors on equal terms; that only in a healthy child can they realize all their hopes.

We must follow this teaching throughout, enlisting the aid of all branches of the profession, encouraging with all our might the tendency toward supervision of eyes and mouth of public school children, and every other similar movement; holding up the hands of men like Evans, who would not be content with mortality statistics in tuberculosis, but wants to find the morbidity as well, in order that medicine may work its rightful end and heal the sick. Finally, there is another and a high duty before us—the duty of doing what we can toward bettering health administration all over the country.

The time has passed, if it ever existed, when by virtue solely of the degree of M.D. a man is fitted to assume the duties and vast responsibilities of health officer. Although unfortunate, it is too true that even with special education we can not be sure of the innate ability to apply the knowledge held. We can, at least, be sure that we are not doing anything so utterly absurd as we have been doing under the old system of appointment, with merit only as an accidental qualification.

It is undeniable that some of these round pegs in square holes have adjusted themselves to these important positions and have proved brilliant successes, but these cases are exceptional and only go as parallels to the fact that a brilliant soldier like Napoleon can occasionally be a brilliant law-giver, not at all indicating that any son of Mars can also rival Lycurgus.

Existing health bodies, national, state and municipal, must be upheld until they can be improved—mark you, not replaced, but improved. We are not and never will be successful radicals and the whole tendency of our people for two thousand years has been, not toward elimination and substitution, but toward amendment, first, last and always.

To this conservative trait we owe the stability of northern European and American governments and the vast sense of security resident in the breast of every citizen of these governments. Fifteen hundred years intervene between the Saxon *gau* and the New England town, and yet they are the same in all essentials. The villager has simply improved his individual status and the primal idea of all having a hand in the government remains the same.

Very slight, indeed, are the formal differences between the ideal health organizations and the existing bodies. A little change in the manner of making appointments; a little better training of personnel; a little fuller understanding by the public of what we seek; a little more care in filling the posts of gradually receding incompetents with well-drilled men, and the end is attained without friction or ill-feeling.

This way, as I see it, lies our destiny. Shall we follow it? Shall we make preventive medicine a very real power in the profession? Or shall we be content to consider it a side issue?

Original Articles

THE LIMITATIONS IN PUBLIC HEALTH ADMINISTRATION *

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A potent cause of unsatisfactory results in public health work is found in the vague ideas often entertained among officials, private physicians and the people generally, relative to the powers and duties of health departments. There is often a clearer perception of the object to be attained than of the means to that end. Very few physicians have more than a hazy notion of the science of sanitation. Education in this line is emphatically lacking, and the importance of the subject is little recognized. The Council on Medical Education of the American Medical Association recommended that out of a course of 4,100 hours only 120, or less than 3 per cent., should be divided between this great subject and medical economics and medical jurisprudence. Considering the fact that this council speaks for the leading American medical schools, it is not strange that we find great ignorance among our professional brethren as to the objects to be sought, and the steps to be taken, in sanitation.

There is inherent in the Anglo-Saxon mind a love of liberty; but liberty is not license. Professor Burgess, in his "Comparative Constitutional Law," sets forth clearly and at some length the fact that true liberty is only found under a constitutional government, and that for this purpose government exists. Thus, in the fourteenth amendment to the Constitution of the United States, we find the provision that no state shall "deprive any person of life, liberty or property, without due process of law." Under military law this provision may be laid aside. Sometimes it is true that for sanitary reasons, as in the presence of a pestilence, it may be necessary to declare martial law, but such a process must be reserved for extreme necessity. It is repugnant to all our institutions. Arbitrary or autocratic methods in health administration arouse an opposition which defeats the object sought. The health official is not a

*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

despot, but a servant, whose duty it is to preserve the health of the community in conformity with the laws which have been properly enacted.

In the United States the national government has only such powers as were conferred on it by the people of the several states. Essentially the state is supreme, and there are reserved to it by the tenth amendment to the Constitution all those powers not given to the nation or prohibited by the Constitution to the state. The only authority of a sanitary nature which the nation has must be found in the regulation of commerce. We frequently hear the suggestion that the national government ought to pass a law regulating the practice of medicine, for example, so that the requirements might be uniform in all parts of the land; and to make transfers from state to state less troublesome. Though such a law might be desirable, as a practical fact it is at present impossible, for the simple reason that Congress has no power to pass such an act.

A similar problem is found in the preservation of interstate rivers and lakes from pollution. The people might, especially in the presence of an epidemic, permit the government to step in actively to purify a river, but its legal power might be very questionable. This power must rest somewhere; if not in the national government then it remains with the state. Through its power to regulate commerce the government has a degree of authority over navigable waters. It is, therefore, constantly spending large sums for the deepening of rivers and harbors. This leads to another practical problem of power and limitations. An act for the deepening of rivers usually provides that it be done by contract at the least possible expense to the government. The contractors who have been dredging the Chicago River have been dumping the slime and filth from the bottom of the river into the lake, and the water-supply of the city has been thereby threatened with contamination. The War Department, which has charge of the dredging, can not order the dredgings taken further into the lake, for that would increase the cost of the work. No national statute is violated by dumping near the cribs. Neither has the national government the power to pass such a law. It may, however, have inserted into the appropriation bill a provision governing such contracts, so that the contractor may be paid for the extra transportation, and under such conditions dumping near a crib might be a violation of contract.

There is another way by which this object may be gained. By the acts creating the Territory of Illinois and the State of Illinois, and by the constitutions of the state, the eastern boundary of the northern part of the state is the middle of Lake Michigan. By the law of the state (Chapter 34, Section 3) also, the jurisdiction of Cook and Lake counties extends to the midle of the lake, whereas (Chapter 24, Section 71) the jurisdiction of a city like Chicago extends over the waters of the lake only three miles beyond the limits of the city. Although Section 256 of Chapter 24 of the Revised Statutes of Illinois provides that: "The jurisdiction of such city, town or village to prevent or punish any pollution or injury to the stream or source of water for the supply of such water works shall extend ten miles beyond the corporate limits," we have the opinion of Attorney-General John W. Griggs to the following effect: "While an ordinance of the city of Chicago may, as to all persons subject to its jurisdiction, forbid the deposit of any heavy substance in the waters of Lake Michigan within eight miles of the shore in front of that city, it can not control or limit the power of Congress over the navigable waters of the United States, nor dictate where it shall or where it shall not deposit, within such waters, material removed in the improvement of one of its harbors." It will be noticed that Mr. Griggs' opinion is relative to the power of a city, not of a state. The power of the state is not there discussed. It is quite true, as Mr. Griggs states, that the proper "remedy is by appeal to the good sense, discretion, and fairness of the Secretary" (of War), for pacific measures may often attain the desired result more quickly than by a resort to force. As a basis of appeal, however, the law of the state should be more potent than that of the city, and in the light of such cases as Wilson vs. Blackbird Creek Company (2 Peters, 245) it would seem that in case of necessity action by the state might prevail in the courts, even against the national powers.

The Blackbird Creek Company, being so authorized by the State of Delaware, constructed a dam by which the navigation of the stream was interrupted. The primary object was to reclaim a marsh, thus increasing the value of the property, and to improve the health of the inhabitants. Wilson was the owner of a sloop, licensed and enrolled under United States statutes. He injured the dam, and, being sued by the company, he denied the right of the state thus to interfere with commerce. Chief Justice Marshall delivered the opinion sustaining the power of the state, although it "stops a navigable creek and must be supposed to abridge the rights of those who have been accustomed to use it." In Gilman vs. Philadelphia (3 Wallace's Rep., 713) the opinion of Mr. Justice Clifford, Wayne and Davis concurring, refers approvingly to the Blackbird Creek case, saying that it "treated the erection of the dam as one adapted to reclaim the adjacent marshes and as essential to the public health, and sustained the constitutionality of the law authorizing the erection, on the ground that was within the reserved police powers of the state." This expression is the more significant for the reason that this dissenting minority held that the Blackbird Creek case did not apply in the Philadelphia bridge case, because there was no question of sanitation involved in the erection of a bridge across the Schuylkill river. The majority of the court had upheld the powers of the state to erect such a bridge, basing their action on the Blackbird Creek decision.

When two constructions of a statute are possible, one of which is constitutional and the other not, we are bound to choose that which is. An act of Congress which refers to a regulation of commerce may be construed in harmony with the sanitary powers of the state; or, in line with the opinion of Mr. Griggs, above mentioned, as against, and superior to such sanitary control by the state. In the latter case Congress would in reality assume jurisdiction over sanitary matters which it does not possess. Such a construction would make the act unconstitutional, on the ground that Congress had exceeded its authority. We are forced, therefore, to reject a construction which makes the power to regulate commerce necessarily paramount to state sanitary statutes, and to accept the view that the state still has sanitary jurisdiction over the officers and agents of the national government.

Neither county nor state may do anything which would interfere with navigation without the consent of the War Department, but it is their manifest duty to protect their citizens by passing and enforcing suitable laws for the preservation of the purity of the water-supply, and such laws the nation is bound to respect.

So far as the decisions of the ultimate tribunal on constitutional interpretation now stand, the following propositions seem to be established: (1) The several states have power to pass laws regulating the internal police of their own territories, which territories include navigable rivers and harbors, as well as unnavigable streams, and the land itself. These police measures . . . are simply a part of the general system by which each state endeavors to protect the good morals, lives, health, persons and property of its inhabitants.[1]

It is generally admitted that quarantine regulations are controlled by the states. I have found no case to the contrary. As Pomeroy says:[1]

This entire class of statutes establishing police regulations is within the purview of state legislation, whether Congress has legislated for the same or similar purposes or not. Among them may be mentioned laws establishing quarantine, licensing and controlling pilots. . . .

In the case of Gibbons vs. Ogden (9 Wheaton's Rep., 203) Chief Justice Marshall says of inspection laws:

They form a portion of that immense mass of legislation which embraces everything within the territory of a state not surrendered to the general government; all which can be most advantageously exercised by the states themselves. Inspection laws, quarantine laws, health laws of every description, . . . are component parts of this mass. No direct general power over these objects is granted to Congress; and, consequently, they remain subject to state legislation.

So in Barbier vs. Connoly (U. S. Reports, 2 Peters, 102) we find the police power of the state to include "to prescribe regulations to promote the health, peace, morals, education and good order of the people."

The authority of the states to pass health laws, as in opposition to the power of Congress to regulate commerce, has been discussed in many cases before the Supreme Court of the United States, and whenever it has appeared that the statutes or regulations have been really in the interest of health the authority of the state has been sustained. Several statutes have been declared unconstitutional on the ground that, though nominally health regulations, they were not so in fact, but they were restrictions of commerce. Such was the ruling in the Railroad Company vs. Husen, 5 Otto, 465, in which the State of Missouri attempted to exclude cattle from certain other states, and in the Passenger cases (7 How., 283); yet in these the sanitary power of the states was recognized. In the Passenger cases Mr. Justice McLean said: "In giving the commercial power to Congress the states did not part with that power of self-preservation which must be inherent in every organized community" (p. 400). On the other hand, in Smith vs. St. Louis and Southwestern Railway Co., 181 U. S., p. 248, which, like the Husen case, referred to the quarantine of cattle, it was held that "quarantine law as construed and applied in this case is not in conflict with the Constitution of the United States. The prevention of disease is the essence of a quarantine law. Such law is directed not only to the actually diseased, but to what has become exposed to disease." In Morgan's Steamship Co. vs. Louisiana Board of Health, 118 U. S., p. 455, we find:

The system of quarantine laws is a rightful exercise of the police power for the protection of health which is not forbidden by the Constitution of the United States. While some of the rules of that system may amount to regulations of commerce with foreign nations or among the states, though not so designed, they belong to that class which the states may establish until Congress acts in the matter, by covering the same ground or forbidding the states. Congress, so far from doing either of these things has, by the act of 1799 (Chap. 53 Rev. Stat.) and previous laws, and by the recent act of 1878 (20 stat. 37) adopted the laws of the states on that subject, and forbidden all interference with their enforcement.

In Jacobson vs. Massachusetts (197 U. S., 11) Mr. Justice Harlan says on page 25:

The authority of the state to enact this statute is to be referred to what is commonly called the police power—a power which the state did not surrender when becoming a member of the union under the Constitution. Although this court has refrained from any attempt to define the limits of that power, yet it has distinctly recognized the authority of a state to enact quarantine laws and health laws of every description, indeed all laws that relate to matters completely within its territory, and which do not by their necessary operation affect the people of other states.

This power was upheld, even though it stopped navigation, as in Leovy vs. United States (177 U. S., p. 621), in which the right to erect a dike was upheld for public health, and in Manigault vs. Springs (199 U. S., p. 473), with reference to a dam on Kinlock Creek, and in *Compagnie Francaise de Navigation à Vapeur* vs. Louisiana State Board of Health (186 U. S., p. 380) a steamship company was forbidden to land its passengers at certain points in the State of Louisiana then under quarantine, although those passengers were not diseased, nor had they been exposed to disease, so far as was shown, and though they had sailed from European ports, in accordance with treaties made between the United States and European nations.

If the sanitary authority rests primarily in the states, does it not necessarily follow that it is the duty of the states to enact and enforce such laws and regulations as shall be best fitted to preserve the lives and health of the citizens? Does not a neglect to do so expose the state to a liability for damages? The object of laws is not the punishment of offenders, but the preservation of the persons and property of the citizens from injury. After an epidemic has despoiled a community, the state can not restore lives lost, or compensate for sickness. The duty of the state is to prevent the epidemic. Methods must change with increase of knowledge. Modern sanitary science is giving many aids for the control of disease far more efficient than the ancient quarantine. Health administrators may rightly be expected to keep informed, and to communicate to legislative bodies the knowledge of these advances, and suggestions for their application. The special responsibilities for each branch of government must be recognized by all.

It must be remembered that the state has no authority to pass any retroactive law, or one which will impair a contract. In the case of dredging contracts already existing which have been based on the right to dump in the vicinity of the cribs, a new law prohibiting such dumping might be held as an impairment of contract. In the case in question, however, Illinois has a statute in the criminal code (Chapter 38, Section 202) providing that "whoever wilfully and maliciously defiles, corrupts or makes impure any spring, or other source of water, or reservoir . . . or aids and abets in any such trespass, shall be fined not exceeding $1,000, or confined in the county jail not exceeding one year." If that statute applies here, such dumping is illegal, and, therefore, a contract based on a presupposed violation of this statute would not be impaired by making the penalty greater, or more clearly stating the prohibition.

It is proper here to ask the question whether or not the discharge of sewers into the lake is not also a violation of this same statute, providing they are so located

1. Pomeroy: Constitutional Law, Sect. 329.

as to contaminate the water supply of the city. Probably this question may be answered only by a court decision.

Just as the national government may not enact legislation further than the people of the individual states have granted authority, so cities, towns, villages and counties are restricted to the powers expressly given by the states. The unit is the state, not the city. Still we sometimes hear it stated that the city has complete power to control sanitation within its limits. The specific powers of a city may vary in different states, but the general statement is the same for all. Again, turning to Illinois for an example, we find a clear statement in the case of Jenkins vs. Board of Education. The relator, Louise Jenkins, was refused admission to the John Fiske School in Chicago because she had not been vaccinated, the board of education basing its refusal on an ordinance of the City of Chicago. In its decision the court says: "Not only has the legislature never prescribed vaccination as a condition to the enjoyment of the legal right to attend public schools, but they have never conferred on cities the power to do so," and again in the same decision: "The health commissioner is a purely ministerial officer and has no legislative powers whatever."

American governmental bodies are based on the triple system, legislative, executive and judicial. These should be distinct. The wording of the different constitutions vary, but the theory is the same in all. That of Illinois, for example, provides that "no person, or collection of persons, being one of these departments, shall exercise any power properly belonging to either of the others."

Health departments are executive in their character, and they should be so restricted in their operations. It is true that in many states a city or village council may be given the duties and authority of a board of health. Such provision is no exception to the general independence of the three branches. The council is legislative whether in or out of the board of health, and the health officer or commissioner is the executive.

Sanitary laws, like those of other nature, should be passed by legislative bodies; state boards of health, so far as I know, have nowhere in this country legislative powers. They may make rules and regulations for carrying into effect the statutes enacted, but such rules have not the standing or the permanence of statutes, and it is a mistake to attempt to depend on such regulations when a statute can be secured. To give uniformity and strength, so far as possible the sanitary statutes should be passed by the state legislature, rather than depend on the enactments of cities. The state statutes should require a certain form of health administration in every city of the state. That makes it possible without delay to communicate with the proper official. An illustration of what is not advisable may be found in the Illinois statutes on this point. There is no provision for compelling the appointment of either a city commissioner of health or board of health, but either are permitted. Neither is there any statement of the qualification for such officials.

If the requirement that contagious diseases should be reported depends on municipal enactment there is immediate confusion. One city requires whooping-cough reported, but not tuberculosis, and there may be a variation also in other requirements. Such laws should be passed by the state, specifically mentioning each disease to be reported, and stating by whom, to whom and when such reports should be made. It is unfortunate that a very large proportion of practitioners do not yet realize that it is as important to report malaria and typhoid fever as it is to restrict smallpox. The determining what diseases should be reported should not be left to the individual judgment of a health officer or to the uncertain ruling of a court. Statistics to be valuable must be on a uniform basis and complete. The personal equation must be eliminated as much as possible.

There is a great difference between a mandate and a request. It is unfair to the practitioner to require him to comply with a rule which he may not easily find. He may be expected to comply with state statutes, but he should not be punished for failure to comply with a ruling of a health officer, or of a court, when such rulings are not easily within his knowledge. On the other hand, for due reason clearly stated, a health officer may request the reporting of a disease not mentioned in the statute, and the request would be generally complied with by the citizens if it were reasonable. Such reports would form a basis for study, and by proving their value the request might pave the way for the statute.

Statutes to be effective must be definite. While it may be necessary sometimes to leave something to the judgment of the executive, the essential requirements must be clearly stated. Suppose the statute simply requires the reporting of "infectious diseases," without mentioning their names. A physician failing to report malaria might deny its infectious character, and legally his opinion is as good as that of the health official. Only a court decision could settle the dispute. On the other hand, it may be left to the health official to determine to some degree the form of the report. His form may include a statement of water- and milk-supply, school attended and other important data, but unless such data are mentioned in the statute both official and practitioner must recognize that the giving of such information is largely an act of courtesy on the part of the reporter.

Not only is an executive health official denied legislative powers, but he is prohibited from acting in a judicial character. He may, and must, often decide questions of interpretation, but his decision is personal, not official. He may not legally determine what diseases shall be reported. Neither may he judicially decide that any statute is being violated. He may prosecute or begin action, but only a court may give a judicial decision.

According to the statutes of some states, the state board of health also has charge of licensure for medical practice. I am not aware of any judicial decision on this point, but it seems that such a provision is unconstitutional on the ground that boards of health are essentially executive, while the work of license boards is judicial, and entirely foreign to the work of a health department. The license board passes judgment on the standing of a medical school, or the educational and moral qualifications of a candidate, basing its action on the evidence presented. Prosecutions for violations of practice laws might properly be brought by a health department, but when the prosecutions are brought by the same body which issues the license the condition easily gives rise to a suspicion of legalized blackmailing.

One great limitation to all health work is ignorance. Administration can not advance far beyond popular knowledge. The model department of health must be primarily an educator. It must educate itself by making original investigations. Others may equally well make bacteriologic experiments, but health officials have a peculiar advantage for the collection and analysis of statistics. Since statistics form a very large portion of

the foundation of public sanitation, it follows that to be a good statistician is a most important qualification for a health official. Then, too, there are certain problems which attract the attention of the sanitarian, which may totally escape the consideration of others. For example: Though plankton (pelagic flora and fauna, distinguished from coast and bottom forms) has been studied in its relation to fish culture, its sanitary relationship is not as yet known. It is quite likely that some forms may be pathogenetic either directly or by their effect on food fish. On the other hand, potamoplankton especially may prove a most important aid in sewage destruction.

The health department must also educate physicians and the laity to an appreciation of the known facts of sanitation, and to arouse a popular interest in the subject. With such a sympathetic interest it will be much more easy to secure suitable legislation, and to enforce the laws without unnecessary friction. On the other hand, when the legislation is far in advance of the popular education the executive must encounter great opposition in its enforcement. It is the lack of this sympathetic assistance which sometimes causes great annoyance. Frequent cases of a contagious disease occur, without an apparent connecting link, because many of the cases are unreported. A limitation here is caused by the unwillingness of people to submit to quarantine. Perhaps that unwillingness arises from financial necessity. The problem suggested is very largely sociologic, and the question to be answered is, how far the community is justified in establishing quarantine. Has the community a moral right to quarantine a family, unless it provides for the support of the family during the time?

A question as to the rights of an individual who is apparently healthy forms another limitation to the health official. Statutes should be passed giving the health official a right to make an examination of the person and discharges of a supposed disease-carrier, typhoid or diphtheria, for example, and to restrict the liberty of all such persons, prohibiting them especially from all occupations in which they would handle food materials, as in dairies, bakeries, restaurants, etc.

Sometimes a health official assumes authority which he does not possesss. Sanitary regulations relative to destruction of rats and insects should be based on statutes, but time may be saved sometimes by issuing an order unsupported by the law. It rarely is necessary to declare martial law. In the absence of specific laws it is usually safer to depend on moral suasion than to strain the force of authority. The facts should be clearly stated to the people that the responsibility for conditions and lack of statutory aid may be placed where it properly belongs.

While it is within the province of a health department to treat disease, it is questionable whether or not such treatment should go beyond protection against the spread of the disease. Unnecessary interference with private business arouses an opposition which does much to limit the usefulness of a health department. Physicians hesitate to report cases if they are to be deprived of the care of their patrons.

In a similar manner it is often necessary that the community should furnish free antitoxin for the purpose of restricting disease. If, however, the antitoxin is given free to all, the legitimate business of manufacturers and merchants is stifled. It is difficult to see any more excuse for supplying free antitoxin to all than for supplying clothing or bread for all.

It is not presumed that the foregoing is a complete discussion of the subject, but it is intended rather as a suggestive outline, to call attention to a much-neglected feature of our work. No reference is made to the limitations in school inspection, that great field for preventive medicine which must largely depend on wise legislation for authority. Neither have we called attention to the physical limitations, dependent on the nature of the soil and its former occupation, or on other conditions largely beyond control. It is a simple matter to construct a rat-proof town, but San Francisco has found it no easy task to exterminate those vermin from old buildings poorly constructed. And there is another great limitation so common as to be well recognized—that of finance. If we have not enough to do all we should like, we are obliged to select that which is most necessary.

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ABSTRACT OF DISCUSSION

DR. J. W. CLEMMER, Columbus, Ohio: This paper treats of fundamental principles in sanitary administration, and nothing could be of more importance in the public health service. At bottom this service rests on legal authority. A public sanitarian should know the legal provisions on which to ground public service. Sanitary authority primarily rests on a grant of the state; this grant may delegate authority to local boards of health to create such rules and regulations which on publication will have the force and effect of city ordinances. The state law may be specific in defining sanitary provisions in all matters of public health interests. In Ohio, large and general powers for sanitary administration are conferred on local boards of health. In turn, these boards create sanitary laws or ordinances for the regulation of the public. In this way the state confers not only police powers, but judicial powers on health boards. The Supreme Court of Ohio has recently confirmed the decisions of the lower courts in a case from Cincinnati in which a sanitary official, in carrying out a regulation of the board of health demanding the confiscation and destruction of milk kept for sale above a certain temperature, arrested and successfully prosecuted a dairyman under this regulation. From this it appears that all the courts of Ohio have confirmed a ruling of the health board in a specific matter of public health regulation. Such powers of administration applicable to other affairs give all the authority desired. The constitutionality of such enactment of the legislature, conferring such powers on appointive bodies, may be questioned, but the fact remains that the results of such a law in Ohio are satisfactory.

Trauma and Gastric Ulcer.—W. Oettinger reports in the *Archives des Maladies de l'Appareil Digestif*, iii, 1909, page 61, three cases in which a gastric ulcer developed after a contusion of the epigastric region, and the causal connection he regards as beyond question. He sifts the literature on the subject of ulcer consecutive to external trauma of the stomach region, and calls attention to occult hemorrhages in the stool as an important aid in diagnosis of gastric ulcer. Chemical tests of the stomach functioning in his cases after the trauma showed excessive glandular activity, and the fasting stomach contained a few c.c. up to 90 c.c. of gastric juice, free from admixture of food. This may be due to excess of glandular functioning, transient pyloric spasm or muscular atony, or all combined, and all these factors favor development of an ulcer. Hematemesis may be observed at once after the accident or after several days, or it may not occur, and the major classic symptoms of ulcer, paroxysmal radiating pain, vomiting of food, etc., are not the rule, but the exception, he says, in gastric ulcer. Diagnosis is possible, however, by investigation of the secretory and motor functioning and search for occult blood in the stool, and he expatiates on the importance of an early diagnosis before irreparable destruction of tissue. His patients were men between 28 and 38, and the accidents had occurred while driving or autoing.

MOLLUSCUM CONTAGIOSUM

REPORT OF AN INSTITUTIONAL EPIDEMIC OF FIFTY-NINE CASES*

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PHILADELPHIA

The term "molluscum" ("molluscis") was first used as descriptive of a dermatologic condition by Ludwig,[1] in 1739. The word was probably intended as a synonym for "mollis," describing certain soft tumors. Alibert,[2] Biett,[3] Cazenave[4] and Schedel,[5] on the contrary, attribute the origin of the term, used by Bateman,[6] to some resemblance existing between the cutaneous tumors and the knots on the bark of the maple. The disease was first described by Bateman in 1817, who gave a very good clinical description. The nomenclature of dermatology in the earlier days of this science of medicine was exceedingly chaotic. Several cases were reported as molluscum contagiosum shortly after Bateman's communication, but the most of these were, probably, fibroma molluscum. Alibert treated of molluscum contagiosum under the name of "mycosis fungoides." Bazin[7] described the disease under the term of "acne varioliformis." Erasmus Wilson[8] wrote of the condition under the heading of small sebaceous tumors. Duhring,[9] in 1881, used the title of "molluscum sebaceum." Unna in his book, "The Histopathology of the Diseases of the Skin," called the disease "epithelioma contagiosum." The terms employed by the various writers on this subject show the extensive and diverse titles used as descriptive of the condition.

Ever since this disease was first described the contagiousness has been discussed; Stelwagon's excellent paper[10] on the subject, in which are enumerated all the household and institutional epidemics on record, speaks strongly in favor of the contagious theory. Household and family epidemics will not be mentioned in this paper, but all of the institutional cases that have been obtainable will be described in some detail.

INSTITUTIONAL EPIDEMICS ALREADY RECORDED

Caillault's Cases.[11]—A girl, aged 8, was admitted to a hospital ward, with numerous tumors on the face, the eyelids and the shoulders. Fourteen out of the thirty children in the same ward finally became affected.

Ebert's Cases.[12]—A girl, aged 14, was admitted to a hospital with tumors on the face. The disease spread to three children who occupied the nearest beds and who came in contact with the patient and each other.

Liveing's Cases.[13]—Nine cases were observed in a school. A few months after the first case was noticed, the eight other patients were attacked.

Mittendorf's Cases.[14]—An epidemic was seen at a home for children. The disease was introduced by a little girl; an attendant noticed lesions on the eyelids at the time of her admission. A few weeks later several of the other girls developed similar lesions. Three months after the arrival of the first patient at the home, twenty-seven children had the disease. Another epidemic was observed at a nursery and hospital for children. Forty-one of the children were attacked within two years after the first case had been noted.

Jackson's Cases.[15]—A small outbreak occurred in the children's pavilion of a hospital. A week after the first case came under observation, 2 others developed; a week later another appeared; and the next week 2 additional cases—6 in all.

Allen's Cases.[16]—A child, with a few typical lesions on the face, was admitted to an asylum. Forty-two children were attacked by the disease a few months after the first child entered the institution. Five new cases subsequently developed, making a total of forty-seven. Another epidemic was described by Allen, also in a children's hospital. A little girl was brought in with a few characteristic tumors on the face; a boy playmate soon developed lesions of the same type; five other children were attacked by the disease.

Stelwagon's Cases.[10]—The first series, consisting of four cases, was seen in a children's hospital. The disease was discovered in one of the crippled infants, and a short time afterward three other patients, in the same ward, were attacked. The second epidemic occurred in a home for children; there were thirteen cases in all among about a hundred children. The third outbreak was noted in the last-named institution about a year later, the former patients having been cured. It consisted of twelve cases.

Tommasoli's Cases.[17]—This epidemic consisted of fifty-six cases in a children's asylum in the city of Sienna.

Graham's Cases.[18]—A little girl was brought to a home for infants with mollusca on the face. Two months later four children developed the disease. The lesions continued to appear on the other children; in four years' time fifteen cases were noted.

AUTHOR'S CASES

During the last year 59 cases of molluscum contagiosum have been seen in St. Vincent's Home out of about 350 children.

Sex.—Thirty of the patients were girls and the other twenty-nine were boys.

Age.—Five of the cases occurred at 7 years of age; 7 at 6 years; 11 at 5 years; 18 at 4 years; 14 at 3 years; and the 4 remaining cases at the age of 2 years.

Location of Lesions.—More than one area was involved in 27 of the cases. The eyelids were attacked in 22 cases; the chin in 16; the cheeks, right, left or both were involved in 11 cases; the forehead was the area of predilection in 11; the nose in 9; the cutaneous surface of the lip in 5 cases; the neck, anterior surface, in 5; the posterior surface of the neck in 3 cases; the left ear in 2; the dorsal surface of the right hand in 4 cases; the middle of the back in 1 case; and in 1 case, the left thigh was the site of attack. In 1 case, the vermilion border of the lower lip was involved by two small, pinhead-sized lesions. Two of the patients reported by Allen also had mollusca on the mucous membrane of the lip. A severe conjunctivitis was produced in one of the cases by a molluscum on the edge of the eyelid causing friction. Similar instances have been reported by Steffen[19] and also by Muetze.[20]

Number of Lesions.—One lesion was present in 19 of the cases; two in 12 cases; three also in 12 cases; four mollusca in 4 cases; five lesions in 2 other cases; six in 4 cases; 1 patient had seven lesions; and in 5 children there were, on each, twelve mollusca. The lesions were mostly from small to large pinhead in size; one molluscum was, however, pedunculated and cherry-size.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Ludwig: Quoted by Erasmus Wilson, p. 301.
2. Alibert: Quoted by Erasmus Wilson, Diseases of the Skin, 1842, p. 309.
3. Biett: Quoted by Erasmus Wilson.
4. Cazenave: Quoted by Erasmus Wilson.
5. Schedel: Quoted by Erasmus Wilson.
6. Bateman: Delineations of Cutaneous Diseases, 1817.
7. Bazin: Quoted by Pye-Smith, Diseases of the Skin, 1893.
8. Wilson, Erasmus: Diseases of the Skin, 1842, p. 301.
9. Duhring: Diseases of the Skin, ed. 2, 1881, p. 121.
10. Stelwagon: The Question of the Contagiousness of Molluscum Contagiosum, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 50; 1889, p. 60.
11. Caillault: Traité pratique des maladies de la peau chez les enfants, Paris, 1859, p. 94.
12. Ebert: Jahrb. f. Kinderh., 1870, iii, 152.
13. Liveing: Lancet, London, 1878, ii, 495.
14. Mittendorf: Quoted by Stelwagon, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 52.
15. Jackson: Jour. Cutan. and Genito-Urin. Dis., 1891, p. 338.
16. Allen: Jour. Cutan. and Genito-Urin. Dis., 1886, p. 239.
17. Tommasoli: Quoted by Stelwagon, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 50.
18. Graham: Jour. Cutan. and Genito-Urin. Dis., 1892, p. 89.
19. Steffen: Klin. Monatsbl. f. Augenh., 1895, p. 457.
20. Muetze: Arch. f. Augenh., 1896, xxxiii, 302.

EXPERIMENTAL INOCULATION

Whenever the opportunity offers experimental inoculation should be tried, in order to determine, if possible, the incubation period of the disease. Several authors (Retzius,[21] Paterson,[22] Vidal,[23] Stanziale,[24] Pick,[25] Haab,[26] and Nobel[27]) have reported favorable results. Several others (Stelwagon,[19] Allen[16]) have been unsuccessful in the attempt.

Retzius reported a successful inoculation on himself. A small quantity of the molluscum material was rubbed into the upper chest; this area was protected by a watch-glass. A pinhead-sized lesion appeared four to five months after this experiment; the growth progressively increased in size during the next three months. The lesion then gradually disappeared. Microscopic examinations of the pressed-out contents were corroborative of the clinical diagnosis.

Paterson, after several attempts, finally succeeded. The contents of the tumor were inserted into the follicles, in a tender part of the skin; such as the angles of the mouth, axillæ, mammæ, etc.

Vidal recorded a successful result, Pantry, one of his assistants, performing the experiment. A positive result was determined in three months.

Stanziale's experimental inoculation also had a successful termination. The substance of the molluscum was rubbed into the sound skin of the inner surface of the arm and forearm; three months later a hempseed-sized lesion developed. Forty days later this tumor had become pea-sized.

Pick, of Prague, was extremely successful in his experiments; nine out of twelve inoculations succeeded. The skin over Scarpa's triangle, in a boy of 11 and a girl of 9, was used in the inoculation. The twelve inoculations were made just within the epidermis. The lesions did not begin to develop until the tenth week; two weeks afterward they were excised, and were found to correspond microscopically with molluscum.

Haab succeeded in inoculating himself, after rubbing the contents of a freshly extirpated lesion into the skin of the forearm. Nothing was noticed for six months, when a characteristic hempseed-sized lesion developed, resembling, clinically and microscopically, a typical molluscum growth.

Nobel's reported favorable result was performed on a patient already attacked by the disease, one of the lesions on the patient acting as the inoculating material. Characteristic lesions did not develop for nine weeks.

Inoculation experiments were attempted in two children, each aged 4, the one a boy and the other a girl. These two children had not been exposed to the disease. In the first case the inoculation was made on Nov. 8, 1908; a small area on the right upper arm was excoriated by a scalpel until oozing of lymph occurred; the contents of a molluscum from one of the affected patients was then rubbed in, antiseptic precautions being observed. Five weeks later a small, conical, yellowish, elevated lesion was noted in the inoculated area; this lesion looked typical of a beginning molluscum. In a few weeks' time, however, the lesion dried up and disappeared. No other phenomenon has occurred in this area.

The second subject was inoculated on Nov. 24, 1908. Two small areas were abraded on the outer surface of the upper arm; the contents of the molluscum was rubbed into one of these; a few drops of a sterile salt solution mixed with some of the contents of a molluscum lesion was rubbed into the other. Unfortunately the arm became somewhat infected and the result has been absolutely negative. The areas inoculated were covered by vaccination shields. The incubation period of the disease can not be stated because the successful results so far obtained have varied between a few weeks and many months. The incubation period, from the time of admission of a child into the home until the disease was acquired, was approximately, in several cases, a year and one-half.

PATHOLOGY

The microscopic picture of the pathologic changes that occur in this disease is quite characteristic, with the lobulated appearance, the fibrous capsule, and the diagnostic molluscum bodies. The origin of the growth, and particularly the molluscum bodies, has been, and still is, a much discussed and unsettled question. The subject has been so fully described in the excellent paper[28] of C. J. White and W. H. Robey, Jr., that only a few of the important points will be emphasized here.

Engel,[29] in 1844, regarded the tumor as an enlarged sebaceous gland; Rokintansky,[30] and also Hebra,[31] some years later, agreed with Engel. In 1865 Virchow[32] stated that the new growth was a lobulated, glandular epithelioma arising from the hair follicle. Retzius stated that the tumor did not rise from the hair follicle, but owed its origin entirely to the epidermis. Boeck[33] denied the sebaceous origin of the new growth, because fat could not be detected in its cells.

White considered that the source of the growth was the rete layer. Crocker[34] believed in the follicular origin of the tumor. Benda[35] stated that in some cases the tumor arose in the hair follicle. Caspary[36] believed that the tumor had its origin in the rete cells. Patterson, in 1841, was the first to mention the so-called molluscum corpuscles or bodies. MacCallum[37] limits the term "molluscum corpuscle" to the peculiar body inside of the epithelial cell. Kaposi[38] beieved that the peculiar molluscum bodies arose from the transformation of cell protoplasm. Vidal inferred from the jelly-like translucency of the bodies that they were the product of a colloid degeneration. Geber[39] sketched the evolution from the rete cells. Unna[40] believed that the bodies were only the result of colloid or hyaline degeneration of the prickle cells.

C. J. White, in the most elaborate paper written recently on this subject, considers that the bodies are simply keratin, identical with the horny layer, except in the shape of the individual cells. He states that the growth arises from the rete, and that there is an extraordinary metamorphosis of rete cells into normal keratin. Several biopsies were made in these cases; the microscope proved the clinical diagnosis.

21. Retzius: Deutsch. Klin., 1872, p. 39; 1871, No. 50.
22. Paterson (quoted in Duckworth's paper. St. Bartholomew's Hosp. Rep., 1872, viii, 64): Edinburgh Med. and Surg. Jour., 1841, p. 280.
23. Vidal: Progrès méd., 1878, p. 478.
24. Stanziale: Gior. internaz. d. sc. med., 1890, p. 321.
25. Pick: Monatsh. f. prakt. Dermat., 1892, xv, 133.
26. Haab: Correspondenzblatt für Aerzte, No. 8, 1886; quoted from article by Stelwagon, Note 10.
27. Nobel: Arch. f. Dermat. u. Syph., 1893, p. 929.
28. White, C. J., and Robey, W. H., Jr.: Jour. Med. Research, 1902, new series, ii, 255.
29. Engel: Ztschr. d. k. k. Gesellsch. d. Aerzte zu Wien, 1844.
30. Rokintansky: Pathologische Anatomie, 1856, p. 79.
31. Hebra: Lehrbuch der Hautkrankheiten, 1872.
32. Virchow: Berl. klin. Wchnschr., 1865, p. 34.
33. Boeck: Vrtljsch. f. Dermat. u. Syph., 1875, p. 23.
34. Crocker: Diseases of the Skin, 1893, p. 479.
35. Benda: Ztschr. f. Dermat., 1895, p. 195.
36. Caspary: Vrtljschr. f. Dermat. u. Syph., 1882, p. 205.
37. MacCallum: Jour. Cutan. and Genito-Urin. Dis., 1892, p. 93.
38. Kaposi: Vrtljschr. f. Dermat. u. Syph., 1877, p. 333.
39. Geber: Vrtljschr. f. Dermat. u. Syph., 1882, p. 403.
40. Unna: The Histopathology of the Diseases of the Skin, transl. by Walker, 1896, p. 795.

BACTERIOLOGY AND CULTURAL EXPERIMENTS

Angelucci,[41] in 1881, described a bacterium, the *Bacterium lepogenum,* which, he maintained, was the cause of the tumor. Neisser,[42] in 1882, denied this and put forward the theory that the cause of the tumor was a gregarin and asserted that the peculiar bodies were the shells of these organisms. Graham[18] stated that he had found a micrococcus in his cases, which grew on potato and in bouillon, produced fermentation in milk, and was stained by Gram and Gabbet's methods. Robey, after extensive cultural experiments, came to the conclusion that the organism found was the *Staphylococcus epidermidis albus* of Welch, the normal inhabitant of the deeper layers of the skin.

Cultural experiments were made in these cases and two organisms were found. The first was a non-motile bacterium, size 0.5 to 1.0 by 1.0 to 2.0 microns, aerobic and facultative anaerobic. It grows abundantly at either room temperature or at 37.5 centigrade. It was negative to the Gram test. All of the differential tests were carried out and the organism was classed as the *Bacterium aerogenes.* The organism was probably present because of some slight contamination at the time of making the molluscum cultures. The second was a round, slightly oval coccus, divided in all planes, about 0.8 microns in diameter; Gram's method gave a positive result. Careful experiments were carried out on all culture media, and numerous tests were employed to determine the proper classification. This organism apparently is the *Micrococcus salivarius;* it was isolated by Biondi from the saliva. It resembles markedly the *Micrococcus epidermidis albus,* but differs from it in one chief way, in its activity regarding gelatin; the *Micrococcus albus* liquefies it in about two to three days, the *salivarius* not at all. These two organisms resemble each other so closely that it is only fair to suppose that they are in some way related; possibly two forms of the same micrococcus.

It is to be hoped that the etiologic factors of the disease will be elucidated, and that the pathologic origin of the growth and of the so-called molluscum bodies will be positively determined.

SUMMARY

Molloscum contagiosum usually attacks the face, in a great majority of the cases on, or in close proximity to, the eyelids. Children are more susceptible to the disease than adults.

It is very difficult to explain the present or other epidemics on any other theory except that the disease is contagious.

The cause of the disease is, unfortunately, still to be determined; although a micro-organism, usually a coccus, has been found in a few cases.

The incubation period is undetermined; from the experiments so far carried out, from a few weeks to many months.

The skin apparently does not have to be broken for the infection to occur, but this point is still undecided.

In closing I wish to express my thanks to Dr. Thomas Cope, pathologist to the St. Vincent's Home, for the careful cultural experiments; to Dr. C. Y. White, former pathologist to the home, for pathologic sections, and to Dr. Kolmer, resident physician in the same institution, for inoculation tests.

332 South Seventeenth Street.

41. Angelucci: Internat. Med. Congress, 1881.
42. Neisser: Monatsh. f. prakt. Dermat., March, 1882

ABSTRACT OF DISCUSSION

DR. GEORGE PERNET, London, Eng.: One point not mentioned is that molluscum contagiosum may be found in certain birds, such as pigeons and buntings. In one instance two women contracted the disease from a pet pigeon. One case was in the practice of an ophthalmologist, and was recorded by him. The patient was in the habit of fondling the pigeon, and suffered much from the disease, especially about the eyelids. Since that time, when these patients come to me, I always inquire whether they have handled birds of this sort. I find that curetting the lesions with a sharp fenestrated curette is one of the readiest methods of getting rid of them, instead of splitting them up.

DR. LOUIS A. DUHRING, Philadelphia: The photographs that I saw did not show the usual formation of the tumors, in that there was no distinctly defined umbilication. It is well known that this umbilication is not always manifest, and apparently it was absent in some of these tumors. I have seen cases of this disease for many years in my own city and elsewhere, and I am always on the lookout for it in the hospitals with which I am connected, but I have found that it is a rare disease outside of asylums and institutions. Notwithstanding the facts relating to contagion, I have never been convinced of the contagiousness of the disease, and the many experiments that have been made still seem to leave that an open question. Its epidemic character is, of course, to be recognized, especially in institutions. The treatment of molluscum contagiosum may be made extremely simple. Perhaps the easiest method is to touch the lesions with a drop of acetic or trichloracetic acid, or to incise and express the contents.

The pathology of this affection, as described by Dr Knowles, is in accord with the studies that have been reported by Dr. White of Boston. I could never see that the disease was parasitic, rather it seemed to be due to elaborate changes in the epidermis, which have been so well described by Dr. White and by others. The affection has also been observed in birds and certain animals.

I think that records of epidemics of the kind narrated should be reported, and in the course of time we shall have much valuable material from which to draw conclusions. The question of the possible contagious character of the disease is one of importance, and one about which we ought to express ourselves if we have had any experience touching on that subject.

DR. MARCUS HAASE, Memphis: I recall one case in an English boy, 19 years old, who had a linear group of three lesions on the anterior aspect of one leg. Having had my attention called to the fact that this disease might be transmitted through birds, I questioned him along that line, but he said he had never handled birds.

DR. WILLIAM A. PUSEY, Chicago: As a student, I was taught to expect molluscom contagiosum as a common affection, but I have found it rare. I certainly see in Chicago ten cases of blastomycosis, for example, to one case of molluscum contagiosum.

DR. F. C. KNOWLES, Philadelphia: In regard to the occurrence of this affection in birds, and various other phases of the subject, I did not take the time to refer to them, as the literature is very extensive, and I had to stick to the subject under discussion. In the pictures that I passed around, it was my endeavor to bring out the umbilication of the lesions. Most of the lesions were absolutely typical in every way, including the umbilication.

St. Vincent's Home, where the epidemic reported by Dr. Stelwagon occurred, is a sister institution to the one referred to in my paper, and the children are sent there as they grow older. It was apparently a continuation of the same epidemic. As a rule, I see about ten or fifteen of these cases every year in the hospitals with which I am connected, but during the past year I have seen over 100 cases, including the 59 reported in this paper. In Dr. Hartzell's service at the University of Pennsylvania Hospital, I have had an opportunity of seeing, during the last few months, an epidemic of over 30 cases; the students in the college department were attacked. This is the largest number I have seen in one year.

THE COMPARATIVE VALUE OF THE INTERNAL ADMINISTRATION, INUNCTIONS AND INJECTION METHOD OF ADMINISTERING MERCURY IN THE TREATMENT OF SYPHILIS *

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In presenting this article I realize the magnitude of the subject and my inability to do it full justice in the time allotted to me. Hence I shall endeavor to discuss the merits of each method impartially and estimate their comparative value, more from my own personal experience in their employment than from the opinions of authors, and I shall quote only when I deem it necessary, as such information any of us can obtain by consulting text-books.

Mercury still stands the premier of all remedies in the treatment of syphilis, and in the light of recent research its position has been reinforced and greatly strengthened. The brilliant work of Schaudinn, Metchnikoff, Neisser and Wassermann has proved that mercury is still our chief remedy, and that the reasoning of all our great clinicians has been correct in regard to its action.

The serum treatment is still in its infancy, and even if one is developed that will cause a more rapid disappearance of syphilitic manifestations than mercury it will require years to prove its superiority and to establish it as a remedy on which we can rely.

INTERNAL ADMINISTRATION OF MERCURY

The ingestion method, or mercury administered by mouth, is one of the oldest methods, and one used more generally by the profession than any other. I fully realize the storm of criticism that may follow my condemnation of this treatment, especially since it is the one favored by our greatest syphilographers.

Fournier calls it the "true method of the treatment of syphilis," and I cheerfully acknowledge him the greatest living authority on syphilis to-day. He prefers internal treatment to all other methods as routine work, and his writings, in addition to Ricord's, are responsible, I believe, for the popularity of the protoiodid pill—the hydrargyri iodidum flavum of the Pharmacopeia. In this country White, Keyes and Taylor are also partial to the protoiodid for routine treatment.

Jonathan Hutchinson considers his gray powder with opium as superior to all other forms of administration.

Keyes, in advocating the internal treatment, prefers the protoiodid pill, to be administered according to his method, which he calls his "tonic treatment," and a great many American physicians have adopted his system.

It is right here, though, that I presume to take issue with these eminent authors, and say that the internal, inunction and injection methods should be employed in the treatment of every case of syphilis; or the internal and inunction combined; or the internal and injection combined; depending on the condition of the patient, his surroundings, etc., as to which is the most advantageous or convenient under the circumstances as they exist. I am opposed to depending on the internal administration alone, as in my experience its action is so feeble and so slow on the syphilitic manifestations, disappointing and discouraging to the patient, on account of slow progress. Its irritating effect on the gums, as it produces stomatitis much earlier than when using either of the older methods; its irritating effect on the stomach and bowels, especially when anything like an adequate dose is given; its uncertain action, being the slowest of all the methods in appearing in the urine; and the frequent outcropping of symptoms while under its influence, have led me to depend on it only when the patient is free from all manifestations of syphilis, and it is desired to keep him slightly under the influence of mercury, as a matter of precaution, when he is being allowed to rest between the periods of his heavier courses of medication. As a rule, the gums will become inflamed, and gastrointestinal symptoms develop long before any material improvement has occurred in the symptoms of the patient, and in most of the grave tertiary lesions that I see the patient gives a history of indifferent treatment or a two or three years' course of internal medication. At least 95 per cent. of the patients with secondary syphilis who consult me have been on pill treatment from one to six months. They generally show numerous symptoms in the form of mucous patches, secondary rashes, sore throat, or some of the other symptoms coincident with the secondary stage. It is not unusual, inaddition, that their gums are sore and inflamed from mercury, and the treatment has been so impotent that they come to the springs for relief, even against the advice of their home physicians. Immediate change for the better is noticed as soon as they are put on the inunctions or injections of mercury, and within a period of three or four weeks as a rule they are free from all manifestations and apparently fully restored to health. It is such cases as these that create numerous converts to the Hot Springs treatment. A large percentage do not remain long enough, return to their homes, and shortly resume internal treatment, and it is not unusual for me to receive letters from them in a period of from two to three months, stating that recurrent secondaries have developed. Now, to my mind, any treatment that will allow symptoms to develop when under its influence (of course, excluding malignant syphilis) is inadequate and should not be depended on exclusively. In some cases of old tertiary lues, in which there is pronounced anemia and cachexia, I have seen beautiful results from internal administration of mercury, combined with iodid of potassium, the old "mixed treatment," so called; but in the early secondary period its action is too slow and in the presence of any grave lesion it is absolutely impotent. In my locality I see numerous cases of tertiary syphilis, involving the nervous system, and a great number of them give histories of three years' internal treatment, especially those that have developed parasyphilitic conditions. These clinical pictures, with which I am so often confronted, have naturally caused me to consider this method of very feeble therapeutic value. The objections of some that it is not scientific because we can not tell how much is absorbed can also be said against the inunction method; but this objection is of very little importance, it seems to me, as it is of minor consequence how little or how much mercury is absorbed, just so we get the therapeutic result; no two people absorb mercury alike; no stereotyped dose can be exactly laid down for all cases. The doses must be varied according to the individual, and it is of little consequence only so that we are careful not to overmercurialize our patient.

When giving mercury by mouth, I prefer a pill containing biniodid of mercury and the iodids of arsenic

* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

and gold; it is non-irritating and has been productive of good results. Another pill to which I am very partial is one recommended by Dr. Bernheim, of Philadelphia, in a paper read before the Mississippi Valley Medical Association in 1898, and which he calls "pill enteric." His formula, which I have slightly modified, contains:

½ grain metallic mercury,
½ grain hydrated wool fat,
½ grain purified ox-gall.

This pill produces less gastrointestinal disturbance than any I have ever used and is as potent in its effect as any of the salts of mercury.

INUNCTIONS OF MERCURY

This is the oldest method of administering mercury, and was employed as far back as the fifteenth century. The description by Fournier of the barbarous manner in which it was applied in those days engendered a prejudice against mercury that reaches down to the present day in the minds of the laity, and is fostered and kept alive by patent-medicine vendors and quacks. It is the ideal way of administering mercury, and would be far superior in routine treatment to any other method we possess if its application were not disagreeable and associated with so many objections.

First, the most important objection, I consider, is that it betrays the patient's secret, and if he is married or living with his family it is practically impossible to administer it without detection. A great many object to it because it is more or less filthy apparently, especially when the mercury cycle is used, and if great care is not exercised in protecting the skin it frequently produces a severe dermatitis. I have seen patients in whom the treatment was absolutely interdicted on this account, the skin being so tender that one application would produce a most violent dermatitis. In one unique case of mine a single inunction of mercury produced a severe edema of the side on which the rub was applied. The rub was applied to the outer surface of the right thigh; the next day the patient's right leg, arm, scrotum and penis were intensely red and edematous.

Patients at home object to the treatment, not only on account of its publicity, but because one can not feel very clean when being constantly anointed every day on different parts of their anatomy, and wearing a suit of underwear stained with the ointment. A very important factor in securing results from this method is to have the ointment properly applied; it should be applied by a trained rubber or masseur. This is the reason that in most cases this treatment is left to be administered at the different thermal resorts that are noted for the treatment of lues on this continent and in Europe; this is why our results are superior to those obtained at home, when the ointment is applied by the patient.

Among the advantages of the inunction treatment I will first mention that it is not painful and it is free from danger. It is potent and intense, and the stomach is left free for other medication. As it is quick and potent in its action, it produces immediate and rapid improvement of the patient, and the disappearance of all syphilitic manifestations. A very marked change for the better is produced within a few days. It does not affect the gums nearly so quickly as the internal administration, but when stomatitis does occur, if the mouth has not been frequently inspected and kept clean, it is liable to be more severe and to last longer. Occasionally early in the course, but generally after several weeks' rubbing, the patient will suddenly develop a mercurial intoxication in the form of acute enterocolitis, with severe griping pains and profuse diarrhea, and the stools may contain a little blood. This condition can generally be relieved within forty-eight hours; the patient can resume his treatment without any further discomfort, and he will generally finish his course with no recurrence.

Frequently these attacks are brought on from indiscretion in diet, and are not due to mercurial poisoning.

In my eighteen years' experience at Hot Springs, and in treating over six thousand cases of syphilis in private practice, I have employed inunctions extensively, and the longer I use them the more partial I have become to them and convinced of their merit; but there is one defect which occasionally causes failure in the treatment and which I have observed a great many times. It is not due to any fault of the method, but to the idiosyncrasy of the patient. There are some patients who, on account of the peculiar texture of the skin, do not absorb mercury. You may rub them over a long period and not witness any response to treatment by improvement of their symptoms, the physiologic action of the drug, or manifestation of mercury in their urine. These patients, of course, if one changes to injections, will immediately respond and show marked signs of improvement. Such cases, I think, are frequently mistaken by physicians, who believe the phenomenon to be a demonstration of the superiority of injections over inunctions; and, of course, in these particular cases, injections are superior. But it does not demonstrate that injections are better for all, as the fault is to be found in the resistance of the patient's skin, and not in the method.

I could cite a great number of such cases from my case books, but I do not care to take up space with case records. The only place I have seen this fact mentioned in literature is in the new work, "System of Syphilis,[1]" in the chapter on the treatment by inunctions, etc., in which the statement is made that in some cases no mercury was eliminated by the urine, although the skin had been thoroughly anointed, so that it seems as though some skins were impervious to this method of administration.

Ehrmann first drew attention to this important fact in connection with the elimination of mercury after inunctions. He showed a patient at the dermatologic congress held at Vienna in 1901 whose urine was free from mercury, although he had been rubbed with mercurial ointment on twenty occasions.

Mracek, at the same meeting, told of a patient who was still covered with the maculopapular syphilid, although he had received four hundred inunctions of mercury. In spite of this energetic treatment, he never had any mercury in the urine, and the syphilitic signs actually increased while he was under treatment. The technic of this method of administering mercury is very important in promoting good results; also the quality of the ointment used; I have used a great variety of ointments, and prefer Squibb's 50 per cent. ointment.

At Aix-la-Chapelle, the mercury cycle is used; that is, different portions of the body are selected every day for the rubbings until the whole surface is anointed. This is the method generally in vogue throughout this country by physicians in our large cities. The Hot Springs method is confined to applying mercury on the back, and sometimes on the hips, and outer surface of the thighs. It was first instituted at the Springs forty years ago, and physicians practicing there still employ it, and have never seen any advantage or reason for

1. System of Syphilis. Edited by Power and Murphy, Oxford Med. Pub. Co., London, Chapter 13, Vol. ii.

making a change. Our results are as good and gratifying, and the physiologic effect just as rapid as when the other method is used, and it has the advantage of being much cleaner, pleasanter, and more agreeable to the patient.

Our technic is as follows: After a warm bath the patient sits astride of a chair, and the attendant spreads the ointment on the back, using a rubber mitt to protect his hand. The ointment is thus rubbed in with a long, sweeping, circular motion, the attendant exercising a firm pressure, but not sufficient to produce too much warmth, as hard rubbing produces irritation. After he has finished, a thin gauze athletic shirt is pulled down over the surface to protect the other undergarments, or else a mercurial pad is used, which is impervious, and is much preferred by many patients. This pad was recently invented by Dr. Randolph Brunson, of Hot Springs, for the purpose of obtaining quicker constitutional results, as the outer covering of the pad is made of an impervious fabric, which produces a slight moisture and softening of the skin, and thereby promotes a more rapid absorption of the ointment. If the pad is used, it is worn constantly throughout the entire course. If the mercury shirt is used, it is changed every ten days or two weeks, as the patient keeps it on constantly, not removing it even when he retires. He gets constant absorption from contact, as considerable mercury becomes deposited on the shirt. Before the inunction is applied the attendant washes the back thoroughly with some good antiseptic solution. The one I prefer is the 1 to 2000 biniodid of mercury, or equal parts of liquor antisepticus U. S. P., and saturated solution of boric acid. This latter formula is very soothing, as there is always plenty of infection on the surface of the skin, and sterilization of the back will add largely to the prevention of any irritation; any hairy portion of the back should be shaved before a course of rubs is instituted. If the patient seems to have a specially irritable skin, in addition, I have the back oiled with a solution of ichthyol and oil of sweet almond. This does not interfere with the action of the mercury, and generally keeps the back in excellent condition.

Now as to the comparative value and potency of the inunction and injection method: From my experience, I am convinced that the inunctions are just as powerful in their action as any of the soluble preparations of mercury, and in some cases much more so; also the effect of the inunctions is much more lasting, and recurrent symptoms do not occur near as early as they do after a course of soluble injections. I have been using injections for ten years, and during that period have had ample opportunity to compare the two methods, as during this time about 75 per cent. of my luetic cases were on the inunctions and 25 per cent. on injections. With few exceptions, I have not been able to see any advantage soluble injections have over the inunctions. The symptoms are not relieved any faster, and, if anything, the improvement in the inunction cases has been more rapid. In addition, the injections are generally more or less painful. To some patients they do not seem to cause any discomfort, while others will rebel against them bitterly. There seems to be a great difference in patients' susceptibility to the pain-producing property of mercury. I have yet to use an injection, containing mercury of sufficient quantity to be of benefit, which would not cause more or less pain. I have had a great number of patients under my care who have recently been to a northern resort in this country where the soluble injections of mercury are largely used. After being conducted through a course of inunctions, they invariably become disciples of the inunction treatment. Patients who do not thrive on the inunctions and improve more rapidly on injections of soluble mercury do so, as I said before, on account of lack of absorption, and still there are others that improve on account of constitutional idiosyncrasy, and I have frequently observed the reverse occur, and had them improve rapidly on the inunctions when injections had failed. There is a great difference in patients' susceptibility to mercury; some require an enormous amount to produce the desired result, while others require very little. One patient, who was suffering with a large gumma on his forehead, had been rubbing for six weeks before coming under my care, and taking large doses of iodid of potassium. The treatment made no impression on the tumor, but, in fact, it was growing larger, and he showed no symptoms of mercurialization. I gave him thirty-six injections of salicylate of mercury, one grain each, every other day, with complete disappearance of the tumor, and still no evidence of mercurial depression or tenderness of the gums appeared. I allowed him to rest two months, and gave him twenty injections of modified gray oil, one grain each. At the expiration of this course, his gums became slightly inflamed, or "touched" as we express it. I saw him eighteen months later and he was in excellent health.

Another patient whom I had under my care four years ago, with cerebral syphilis, took 136 inunctions and twenty-six injections of one-fourth grain each, of succinimid of mercury, coincident with the rubs. At no time was the course interrupted, nor did he show any pronounced symptoms of mercurialization; as to the merits of this treatment in his case I recently received a letter from him, stating that he is in perfect health. These cases, of course, are rare, while now, at the other extreme, we occasionally encounter patients who can not stand mercury at all, even when their condition indicates that they are sadly in need of it. I have seen one inunction of mercury produce a severe mercurial intoxication; in another case two inunctions produced similar results. Frequently these poor unfortunates have a tendency to malignant syphilis, and can not tolerate specific treatment and show no response to it; they tax our ability to the limit.

The theory that was advanced in Germany a few years ago, that no absorption occurred from the rubbing of mercury, but that the medicament was taken in entirely by inhalation, has always appeared to me absurd. This has been proved a fallacy by the experiment of shaving the back of a rabbit and rubbing the mercury in the exposed part of the skin; a section of the skin was then examined under the microscope, and globules of mercury were found in the sebaceous and sudorific glands.

Likewise, we all know that rubbers would be susceptible to mercurial poisoning if this theory was correct, as they are exposed to the so-called fumes while constantly rubbing it. I know bath-house attendants at the Springs who have been rubbing mercury for thirty years, and have never shown any signs of mercurial poisoning, nor have I ever heard of one. I have a man in the rubbing department of my office who has been rubbing on an average of from ten to twenty patients a day for ten years; the room is kept at a temperature of from 80 to 85 F., and he has never shown any symptoms of mercurialization in the slightest degree.

INJECTION METHOD

The injection method of administering mercury, according to Fournier, was first "introduced by Hebra in 1864, but it did not really enter into practice until after the publication of Lewin in 1867." It grew into popularity much more rapidly on the continent of Europe than in America, and I think the writings of Taylor and J. William White in Morrow's "System of Genitourinary Diseases and Syphilis," condemning it, had considerable to do with retarding its adoption by Americans, and subduing our enthusiasm; especially as White's article contained letters from a large number of our most prominent specialists in those days, and they all condemned it as inferior and dangerous. In the last twelve or fourteen years, it has rapidly grown into favor in this country, especially injections of the soluble salts of mercury. Hundreds of papers have been written on the subject, and I fear some writers have allowed their enthusiasm to warp their better or more matured judgment. The marvelous claims for it by some I consider very much overdrawn and I do not consider it a treatment that should be adopted in all cases, as advocated by some.

If a great many of these same zealous enthusiasts had had the same experience with the inunctions, I firmly believe that their opinions would be very much modified, and of more value. The injection method has many attractive advantages: first, it is clean; it is secretive; it absolutely conceals the patient's condition from every one but his physician; but the large volume of advantages that are claimed for it by the numerous advocates would fill several chapters.

Colonel Lambkin, in "System of Syphilis," vol. ii, gives as a brief list of the most important points to consider as I have found. They are as follows:

1. It is convenient to the patient.
2. It insures the patient's getting regular treatment.
3. It leaves the stomach free for the reception of other medicines.
4. It insures more accurate doses.
5. The absorption of mercury is much more certain.
6. It does not interfere with the gastrointestinal system.
7. There is less chance of toxic symptoms, especially of stomatitis.
8. Both therapeutic intensity and physiologic effect are much more marked when the mercury is introduced by this method than by others.
9. I will add that some writers have stated that we get a greater amount of effect from a smaller amount of mercury than when using any other method.

I will briefly analyze the various claims: Nos. 1, 2 and 3 I admit and pass on without further discussion, only to say that the same can be said about inunctions.

4. The dose may be more accurate; but what advantage is this, if no two persons require the same dose? And frequently the dose has to be changed at different periods in the same patient.

5. The absorption of mercury is much more certain. This will depend, though, on its not becoming incapsulated, as it frequently does. Often we see patients, especially those who have been taking injections of the soluble salts of mercury, with their buttocks a mass of nodules even a year or so after they have received the injections; that these nodosities all contain mercury is beautifully illustrated in the two cases cited by Fournier. I have also seen these nodules suddenly absorbed and producing very sore gums.

6. As to the claim that it does not interfere with the gastrointestinal system, this is a grave mistake, as I have seen very severe mercurial intoxication produced from the injections, and the fatal cases that had been reported from the insoluble salts generally show marked disturbance of the gastrointestinal tract.

7. As to there being less chance of toxic symptoms, this is also a grave error. A number of deaths have been reported from injections of insoluble preparations of mercury. Dr. Fuller, in his article on the "Salicylate of Mercury,[2]" speaks about the possibility of producing an oil embolism that may manifest alarming symptoms, though not fatal.

Fournier relates numerous deaths that have occurred from injections of calomel, and I presume all have seen Lessère's recent report of the number of deaths and accidents that have occurred from injections of insoluble salts and gray oil.

Bartsch, of Breslau, has recently published several cases of poisoning with fatal results, two of which are especially interesting; one patient, a young woman of 24, died from four injections of a 10 per cent. solution of salicylate of mercury. Another, a woman of 40, died after four injections of calomel; both patients had severe diarrhea and mercurial colitis.

As to the injections being less liable to produce stomatitis, when the latter does occur, it is generally much more severe and lasts longer than when using the other methods.

8. I admit that the therapeutic intensity and physiologic effect is much more marked and lasting when the insoluble preparations are given, but not so when the soluble are given, as they are inferior to inunctions in most cases.

9. As to securing the greatest effect with the smallest amount of mercury, I consider this of minor importance. It seems to me a matter of very little consequence how much mercury you use, so long as it does not injure your patient, and he improves while under its administration.

The soluble preparations I have used are the succinimid, bichlorid, biniodid, sozoiodolate, albuminate, benzoate, and cyanid. I prefer the cyanid and the succinimid, as they are the least painful. The bichlorid I consider superior to them all, but it is so painful and prone to nodulation that a great many patients will not submit to the treatment. I have modified and greatly reduced the pain from injections of bichlorid by the following formula:

R.	gm. or c.c.	
Bichlorid of mercury	.5	gr. viii
Phenol (carbolic acid)	.5	m. viii
Physiologic salt solution	31	ʒi

The dose is from fifteen to thirty minims (1 to 2 c.c.) every other day. This is my original formula, although it has been appropriated as original by two writers in different parts of this country, but they received the formula indirectly from me. There is no danger from the carbolic acid in this preparation, and it greatly reduces the pain of the injection.

INSOLUBLE PREPARATIONS

This is the most intense and potent method we have of administering mercury, but, as it is not free from danger, it should not be adopted as a routine and used without discrimination and care; hence, it should be reserved for selected cases, especially those in which it is

2. Med. Rec., New York.

desired to produce a profound mercurial impression. The one that ranks at the head of them all, I presume, is calomel, but with it I have never had any experience, although I was deeply impressed with the article read before this section last year by Dr. Klotz. I have been deterred from its use by the literature on the subject, as the majority admit that it is very painful, besides being the most dangerous. I have never had a case in which I deemed it necessary to resort to its use. My experience has been confined to the emulsion of salicylate in 10 per cent. solution of liquid petrolatum, as advised by Fuller and Gottheil. I used this preparation in a number of cases for about one year, and had some very excellent results, one in particular I have mentioned above, but, on account of the volume of the injection, and a number of patients complaining of it being painful, I changed to the modified gray oil, as suggested to me by Dr. Heidingsfeld. The original gray oil, or oleum cinereum, as invented by Lang, I had previously tried and discontinued, likewise on account of the great pain it produced.

About three years ago Dr. Heidingsfeld gave me his formula, which was a modification of Lang's, and consisted of pure hydrated wool fat and bidistilled dental mercury, equal parts by weight, making a 50 per cent. ointment, of which one minim approximately represented one-half grain metallic mercury. His previous modification of Lang's oil I had tried, and stated to him that I found it very painful. In this previous formula he used liquid petrolatum and also sterilized his wool fat; he had discovered that if he did not sterilize the wool fat and depended on the mercury to render the oil sterile it caused very little discomfort and was almost painless. Sterilizing the wool fat causes some chemical change with which I am not familiar, but it is a clinical fact that it does render the injections much more painful. I have been using this preparation now for the last three years, and am much pleased with its results and its powerful action on syphilitic lesions; very few patients have ever complained of pain from the injection. Some will complain of pain and soreness a day or so after the first two injections are given. After that their hips seem to become inured and cause them very little discomfort. The dose is from two or three minims, as suggested by Dr. Heidingsfeld.

Dr. L. E. Schmitt, of Chicago, uses as high as five minims, but I prefer the small dose, and give the injections more frequently. This oil being so thick (the appellation "gray ointment" would be more descriptive), there is practically no danger of producing an embolism, and the small quantity injected is an important factor, I think, in rendering it less painful. A preparation used in England is called "mercurial cream." With this, liquid paraffin is added to the base, as in Lang's latest formula; this is used largely in the British army, and admitted, by the writers who advocate its use, to be very painful.

Colonel Lambkin has modified the formula, and uses palmitin as a base, adding camphoric acid and absolute creosote to render it painless and sterile. He uses the same combination with calomel injections, and says that it renders the injections of both absolutely painless.

His description of his experiences with these preparations is, indeed, very attractive, and I intend giving them a trial.

I have administered over six hundred injections of Heidingsfeld's modified gray oil, and have had only two superficial abscesses, both in women with fleshy hips. They were caused by withdrawing the needle too soon and allowing a thin column of mercury to follow the needle into the subcutaneous tissue. In addition, the needle was not sufficiently long to deposit the mercury in the muscular tissue.

The technic of these injections is very important. In the first place, the needle must be long enough to insert the oil well into the muscles, as it is a very stiff ointment; after inserting the needle, considerable pressure must be exerted to expel the oil into the tissues. Likewise, the needle should be allowed to remain at rest before it is withdrawn, fully twenty to thirty seconds, so that the mercury has ceased oozing from the end of the needle, thus avoiding the accident I spoke of above; if any mercury is deposited immediately beneath the skin, it is liable to form a very sore and painful nodule that may possibly terminate in a superficial abscess. Great surgical care and cleanliness must always be carried out in giving these injections.

I employ this preparation in all cases that have failed to respond to the soluble injections or inunctions, in cases in which I desire a quick and intense action of mercury in the presence of all serious lesions, especially of the nervous system, when desiring to give the therapeutic test, and in cases of patients who object to frequent visits to the office. Injections are given every other day, every third day, twice a week, or once a week, depending on the mercurial energy I wish to exert. My results have proved to me that it is the most intense and desirable method of administering mercury in severe cases, and a treatment to which a patient rarely, if ever, objects. Cases in which the other methods have failed will respond to these injections, and my results, as a rule, have been all that I could desire, and most gratifying to the patient. The method is not nearly so liable to produce mercurial intoxication as are the soluble injections, but there is one important factor to keep in mind always: At the first suggestion of tenderness of the gums or any other toxic symptom, the treatment must be stopped, as there still remains considerable mercury in the tissues, and if you are not very careful you are likely to have very severe stomatitis with pronounced physical and nervous prostration. I have had the gums become inflamed a month or six weeks, and in one case two months, after the course of injections had been finished, E. L. Keyes has made the same observation.

SUMMARY

Now, to recapitulate as briefly as I can, in comparing the three methods:

As stated before, I consider that all methods should be combined at different periods during a full course of treatment. A course of treatment in the early inception of syphilis, I think, should start either with inunctions or injections and be followed by internal medication, instead of the pill or internal treatment being given first, and followed later by injections and rubs, as advised by most modern text-books. The brilliant results to be obtained in the prevention of future accidents in any case, I think, are to be accomplished in the first year's treatment, and we should attack the disease energetically, and when the system is being flooded with the syphilitic virus. The more rapidly we can overwhelm and cause the extinction of the spirochete, with a treatment that is not injurious to the system, the better is our selection. Hence I have formulated the following routine to be pursued in cases of syphilis as they ordinarily run:

First Year.—Two courses of either inunctions or injections, covering a period of two months each; after each course of treatment a month's rest should be allowed and then internal medication two months during the interim up to within a month before resuming the second course, whether inunctions or injections, making four months' rubs, four months' internal treatment, four months' rest.

Second Year.—Two courses of rubs or injections six weeks each; two courses of internal treatment, eight weeks each; two courses of rest, six weeks each, and two of four weeks each, making a total of three months' heavy rubs or injections, four months' pills, and five months' rest.

Third Year.—Treatment every other month, alternating between the internal and more intense methods.

Fourth Year.—Six weeks of inunctions or injections.

Fifth Year.—Four to six weeks of inunctions or injections. The above treatment is given in tabular form:

TABLE OF COURSE OF TREATMENT FOR FIVE YEARS

First year.

2 months' inunctions or injections,
1 month's rest,
2 months' internal treatment,
1 month's rest,
2 months' inunctions or injections,
1 month's rest,
2 months' internal treatment,
1 month's rest,

Giving 8 months' treatment, and 4 months' rest.

Second Year.

6 weeks' inunctions or injections,
8 weeks' rest,
8 weeks' internal treatment,
4 weeks' rest,
6 weeks' inunctions or injections,
8 weeks' rest,
8 weeks' internal treatment,
4 weeks' rest,

Giving total, second year, 7 months' treatment, 5 months' rest.

Third year.

1 month inunctions or injections,
1 month rest,
1 month internal treatment,
1 month rest, continuing so throughout the entire year, alternating from internal to injections or rubs

Thus giving the total during the third year of 6 months' treatment, and 6 months' rest.

Fourth year.

6 weeks' inunctions or injections.

Fifth year.

4 to 6 weeks' inunctions or injections.

Then one course of treatment of one month each, for the next five years, thus carrying our patient up to or through the parasyphilitic stage. I do not contend that every patient absolutely needs this protracted treatment; no doubt, a good number escape, and live to a ripe old age, after a very indifferent course, of one or two years' treatment following infection. Undoubtedly some recover spontaneously, but there is a large percentage of those who do not enjoy such luck, as my home is a Mecca for so many of these unfortunates; I am constantly confronted with numerous cases of early neglect and insufficient treatment.

Fournier states that at least 50 per cent. of tertiary lesions involve the nervous system, and this does not include all the parasyphilitic lesions. Hence, I think it better to treat a little too long than to stop one day too soon. I have patients who have been under my care for fifteen years who visit the Springs annually and take a course of three weeks of inunctions. Most of them have shown no signs of syphilis for ten or twelve years. Still they do this as a matter of precaution; the treatment seems to do them no harm and they enjoy excellent health; as the cure of syphilis is so uncertain, I feel more secure under these precautions and the patient feels likewise. I am a positive believer in the cure of syphilis, but I make this statement with qualifications, as I believe that, with few exceptions, the organism of every patient who has ever had syphilis is indelibly stamped with it for life; and that a proper course of three to five years' treatment following the infection will cure the average patient, provided he leads a proper life, but that there is always that apprehension that in the future, if some intercurrent trouble develops, that will create *the locus minoris resistentiæ*, his old malady may manifest itself in the form of a grave or serious accident.

In my experience I have seen it return thirty, thirty-eight and forty years after infection; during the intervals, the patients enjoyed excellent health and responded rapidly to treatment, which proved the diagnosis.

The important points which I wish to emphasize in this paper are:

All three methods should be used in treating any case of lues, as previously described.

When first instituting treatment after infection, either inunctions or injections should be employed, followed by internal medication, instead of treatment with pills, first followed by more heroic methods, as advised by most of the leading writers.

The inunctions, from my experience and observation, on an average, are superior to the soluble injections, and more lasting in their effects.

The insoluble salts are too intense and profound to be employed in routine, and should be held in reserve for rebellious cases and for cases in which rapid and pronounced mercurialization is desired.

Finally, the long course of treatment I have advised should be pursued in all cases.

The six cardinal points in the therapeutics of syphilis are to keep a close observation of the weight, kidneys, bowels, stomach, gums and nervous system; especially the latter, as some patients will never manifest any evidence of mercury in the form of stomatitis, and the first evidence you have is a profound and acute nervous prostration.

102 Exchange street.

ABSTRACT OF DISCUSSION

DR. WILLIAM S. GOTTHEIL, New York: I advocate a conservative eclecticism in the treatment of syphilis. We should never forget that when we introduce mercury into the human system we are incorporating a substance that is poisonous, and that may have untoward and unexpected effects. Death has occurred from administration of mercury in any form, by ingestion and by inunction; it has occurred from injections of soluble as well as of insoluble preparations of this drug. Injections of gray oil have been responsible for more accidents than any other preparation. I am not prepared to say that this is because it is more dangerous than the others; perhaps it is because it has been more largely used.

There is a distinct reaction after the injections; the metallic antitoxin acts exactly like the organic diphtheria antitoxin in this respect. I have studied this more especially in the case of physicians who were under treatment. There are chills, malaise, pains in the limbs, and a temperature that may rise to 104 F. and over. This reaction may be so severe as to constitute a valid contraindication to the mode of administration. There are also other contraindications. Some patients are so thin and have such small gluteal muscles that the injury of the injection causes them too much trouble; and occasionally we meet one so very stout that the longest needle will not reach through the layers of fat into the center of the muscle mass, and painful indurations result. I have found,

however, that women stand the injections remarkably well, provided that a sufficiently long needle is used; and I always keep some on hand for the purpose.

DR. W. B. TRIMBLE, New York City: I thought Dr. Gottheil advocated the use of the injection treatment, above all others, and as a routine measure in every case, I disagree with this view, as I do not think it the method of election in every case of syphilis. If it were necessary to select one form of treatment to the exclusion of all others, I do not think I would hesitate in choosing the inunction plan. The soluble preparations that I usually employ are the succinimid and the benzoate.

DR. ALEXANDER S. WOLF, St. Louis: It appears to be a comfortable and convenient arrangement for both physician and patient to have a nurse or an attendant rub the blue ointment into the skin of the patient, but such a luxury can be had only by the wealthy. Such a procedure, however, is not rational, and for the rich as the poor we must insist on self-inunction treatment as the one which under necessary instructions for the patient—and in this regard our young generation of physicians must be instructed thoroughly in the school—will alone be of benefit. While the poor patient will abide by our directions without any further deliberation, the well-to-do patient who has heard about inunctions carried out by a nurse, must be enlightened as to the necessity and rationality of self-rubbing. You need only to impress on his mind that it is better for his health and the result of the treatment, if a good deal of the ointment will remain in the skin of his own hand than in the leather of the nurse's glove.

DR. LOUIS E. SCHMIDT, Chicago: In discussing this subject of the comparative value of the different methods of treating syphilis, we should do so in connection with our present knowledge of serum reaction. I have had about 60 cases of syphilis in which practically the same line of treatment has been carried out, mostly by the injection method with gray oil. I want to bring out the result of the Wassermann test in these cases. In some cases, the test was negative after only eighteen months of treatment, while others gave a marked reaction after four or five years of treatment. I have had patients under my observation and treatment for three, four and five years, and still the test is positive. What am I to do in such cases? Am I to continue vigorous treatment for ten years or more if the reaction continues positive, and in those cases that give a negative reaction after only eighteen months of treatment, can treatment be discontinued or pursued less vigorously? I believe the test should be repeated every six months, and if it remains negative, continue to leave the patient untreated. However, as the test is still so new, I am inclined to believe that a mild mixed treatment should be kept up.

DR. E. C. HAY, Hot Springs, Ark.: One point I would like to emphasize is that the insoluble injections should not be repeated too rapidly, in order to avoid the possibility of mercurial stasis, as alarming or even fatal symptoms may develop if not detected in time from a sudden absorption of a large quantity of mercury. This condition can generally be recognized by keeping a close watch over the urine for the elimination of mercury. In regard to the inunction method, I am not in favor of having the patients rub each other. In my experience, it has been better to employ a trained rubber for that purpose, one who can do the work more thoroughly than the patients could do it for themselves.

Municipal Playgrounds.—Playgrounds, places for the youngsters to play and develop their young lungs by exercise, are becoming one of the big items in the budget of a city. Chicago, for instance, has spent eleven million dollars on a system of playgrounds and recreation centers, containing outdoor and indoor gymnasiums, swimming pools, wading pools, shower baths, swings, slides, ball fields and rooms for lectures and social meetings. New standards have been set up in neighborhoods that knew them not, and the benefit is accounted so great that the cost of $2.00 per $1,000 assessed valuation of the property benefited is regarded as an ideal investment of the city's income.—*Hygiene and Physical Education.*

INOCULATIONS OF POLYVALENT STAPHYLOCOCCIC SUSPENSIONS IN STAPHYLOCOCCIC INFECTIONS OF THE SKIN *

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DETROIT

Now that time has allowed the smoke of enthusiasm to clear away, we should be able to take an accurate reckoning of the value of artificial immunization of patients with staphylococcic infections of the skin.

Two years ago, before this Section, I reported a series of staphylococcic infections of the skin treated by bacterial inoculations. The conclusions at that time were not unlike those of other investigators along this line of treatment. Autogenous suspensions were found more efficient than monovalent stock suspensions, and inoculations guided by opsonic estimations were found more effectual than those that were not so guided.

Owing to the time consumed in isolating the invading organism and standardizing the suspensions, and the difficulties in making opsonic estimations, opsonic therapy has evoked criticism. The purport of this paper, then, is to discuss the simplifications which assist in placing opsonic therapy on a practical basis. So much progress has been made over our previous knowledge that we are now able to obtain as good results, in selected cases, with polyvalent stock suspensions as with the autogenous. Laborious opsonic estimations are unnecessary as a guide to reinoculations. Experience has proved to me that inoculations of a polyvalent stock suspension, made at intervals indicated by clinical symptoms, produce as good results as when controlled by opsonic indices.

For some time bacteriologists have noted minute differences between cultures of the same species obtained from different sources, although the morphology of the organism shows the typical form on ordinary culture media. A suspension, then, made from a number of strains of the same organism, obtained from various patients suffering from the same disease, is the stock suspension employed. The object of this is to embody the varying properties of a number of strains.

Polyvalent suspensions of staphylococcic strains have been and are being used by many investigators, but, to my knowledge, no large number of strains obtained from the same disease has been employed. My polyvalent suspensions have contained no less than twenty different strains, which have been increased to forty by mixing two or more suspensions. These strains are kept growing slowly, at room temperature, in darkness, and are transferred as infrequently as possible to keep them alive. By this method the virulence of the strain is probably less lowered than might be the case if the strain was frequently transferred. New strains are occasionally being added which give varying ages to the suspensions as well as varying virulence. Such a suspension is as easily prepared and standardized as an autogenous one, and retains its activity, as far as can be determined clinically, for at least six months. Here, then, we have a stock suspension which is ever ready and can be used when the patient first appears, with a saving of days of time over the method of preparing autogenous bacterial suspensions.

* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

From comparisons of opsonic indices, in a large number of like infections taken in the laboratory prior to using stock suspensions, we are given further valuable knowledge, not only in estimating the size of the dose to administer, but when to reinoculate. The dose of the first inoculation should be of sufficient size to cause only a slight languor, which means a four to eight hours' negative phase after the inoculation. From 100 to 150 millions is the appropriate initial dose, varying as clinical indications denote. In the immunization of animals toward a given toxin, the dose given must be of gradually increasing strength, to a certain standard, the frequency and size of the dose to be governed by the temperature of the animal and other clinical manifestations, and later by potency tests. The same is true of human artificial immunization with bacterial suspension, the doses varying in size and intervals. Within six times twenty-four hours after the initial dose, the patient's resistance, as proved by opsonic estimations, will have dropped after its positive phase to within nearly what it was when the first dose was administered. Then the second dose should be given, which should be from 200 to 250 millions, and the third from 300 to 400 millions. It is seldom necessary to increase the dose to more than 600 millions. The spacing of the first three doses six days apart (six times twenty-four hours) is of importance, and further doses should be given as clinical manifestations indicate. One of the first indications of a lowered resistance and recurrence is a tenderness in the already healed scar, as in boils.

The rebellious types of the following diseases are those to be considered: furunculosis and carbuncle, impetigo contagiosa, sycosis staphylogenes, and pustular acne. In selecting from this group of diseases, we are considering only the rebellious ones, thereby excluding the possibility of spontaneous recovery, consequently putting this therapeutic measure to the crucial test.

What is more annoying than the persistently recurring lesion in what is termed the chronic "boiler," or the sycosis condition which presents itself with a history of years of existence? The patient who returns almost annually, usually during February or March, with a multiple furunculosis has a lowered resistance to staphylococcic infection. We have heretofore reasoned that the condition of such a patient was below normal or he would not be afflicted with such infections. Our medical advice has been governed by such suppositions, and tonics, diet and specific medications, the action of which has never been clearly known, have been prescribed. We had no accurate means of determining the patient's resistance to the infection, or whether our treatment raised his resistance, until Sir A. E. Wright published his most ingenious technic, by the application of which we are able artificially to immunize patients by bacterial inoculations. The further proof that the patient's resistance is not only low during such infection but in the process of artificial immunization, lies in the fact that the patient's resistance shows a prompt rise, as indicated by laboratory indices which are confirmed clinically. The lowered resistance of the patient may not be due wholly to deficiencies in the blood substances or lack of opsonins, but partially to abnormal development or lack of tonicity of the skin structure. General lowered resistance to the staphylococcic family, due to constitutional diseases, will not be considered.

The predisposing qualities of such skin structures to infection must be considered and corrected, or the raising of the patient's resistance will often fail to cure.

Many abnormal conditions in the skin structure predispose to a more easy access of this type of infection into the deeper structures of the skin; for example, the thin, oily skin with the gaping sebaceous ducts not only allows easy entrance of the organisms, but such a skin supplies them with an abundance of food in the excess sebaceous material. The walling-off of such an infected area is Nature's means of preventing systemic infection. This process in the infection of the carbuncle or boil is so thorough that the infected area must necrose in order to rid itself of the infection. This process of defense not only practically stops leucocytosis, but prevents the toxins from entering the blood stream, except in limited quantity, which results in the formation of protective substances and only partial immunization. Protective substances are not generated in sufficient quantities to prevent reinoculation; hence the continuance of the infection. The toxins of such an infection must enter the blood stream in safe quantities in order that protective substances may be elaborated to the degree of immunization. While the natural forces of resistance are spending their best efforts in walling off the infection, unable to produce immunizing substances from lack of specific toxic material, our assistance in artificial immunization is of unquestionable value at this time, which is demonstrated clinically.

One can readily see the utter uselessness of attempting to raise the patient's resistance to a given organism when the protective substances or leucocytes are unable to reach the organisms because of the stagnation of circulation in the area of infection. The absolute necessity for other therapeutic means here presents itself to the more successful management and cure of this type of infection. The drawing off of such stagnant fluid by excision and evacuation of the furuncle or carbuncle and the application of heat, or Bier's hyperemia, cupping to encourage bleeding, is advisable. Such means not only draw off the stagnant infected blood and lymph, but produce increased circulation of blood and lymph through the infected area. At this time the assistance brought about by a general raising of the blood resistance may be effected by bacterial inoculations.

In no other staphylococcic infections of the skin have there been such uniformly gratifying results as in multiple furunculosis and carbuncles. This method of treatment has a scientific basis and is rapidly replacing the older methods. It has been possible, in a number of instances, to compare the efficiency of the polyvalent suspensions with that of autogenous suspensions, observations being assisted by patients, who were physicians. Rarely has a new lesion developed after the first inoculation has been administered. A partially developed lesion can often be dwarfed, and within forty-eight hours all pain and discomfort to the patient will have subsided.

In order to ascertain just what percentage of the cases were recurrent, I recently reviewed the histories for the last two years of patients given polyvalent suspensions: I was surprised to find that there had been only three recurrences out of twenty-eight cases of multiple furunculosis. It was also of interest to note that the three patients who suffered recurrences were those to whom no more than two inoculations had been administered. Undoubtedly, only partial immunization had been effected. Previous to this treatment, at least 90 per cent. of these cases had been the chronic recurrent type, and for a period of two years there have been no recurrences of cases who were given four or more inoculations.

Comparing our knowledge of immunization brought about in other infectious diseases, at least four inoculations seem necessary to insure against recurrence.

It is important to instruct the patients when inoculations are given to take precautions against fatigue. The negative phase will then be less pronounced, and the positive phase prolonged. The beneficial effects of inoculations can be completely destroyed by prolonging the negative phase by fatigue, alcoholism, menstruation, or any intemperate indulgence, and new lesions may develop.

CONCLUSIONS

Polyvalent staphylococcic stock suspensions administered in appropriate doses have a decided therapeutic value in a group of localized, rebellious infections of the skin. Their administration is practically without danger, bringing about prompt cessation of the active infection and immunizing the patient against a recurrence of the infection for a more or less prolonged interval.

Clinical observations act as guides to the time for reinoculation and the size of dose to be administered.

The appropriate standards for size and frequency of doses have been previously established from opsonic estimations on laboratory patients with like infections, and are not necessary for each specific case.

Failure to immunize the patient artificially may be due to an abnormal condition of the skin, non-specific bacterial suspensions, or incorrect dosage.

Much time is saved in the use of stock suspensions by the elimination of opsonic indices and by the assistance derived from other therapeutic measures.

Less suffering, less deformity, less danger of systemic infection, and less liability to recurrence are the advantages derived from the use of bacterial suspensions as a therapeutic agent.

I am especially indebted, and wish to express my thanks to L. T. Clark, B.S., of the Research Laboratory of Parke, Davis & Co., for bacteriologic assistance and suggestions.

Washington Arcade.

ABSTRACT OF DISCUSSION

DR. M. L. HEIDINGSFELD, Cincinnati: I have been more than favorably impressed with the results which I have secured from vaccine treatment in furunculosis, acne, sycosis and various forms of dermatologic affections complicated with secondary impetiginous infection. I have been induced to take up this form of treatment, largely by the favorable results which I have obtained in genitourinary work with gonococcus vaccine. I have had no experience with polyvalent stock vaccine, as my work has been entirely limited to monovalent vaccine as supplied by various wholesale drug houses and with autogenous preparations. I believe that the vaccine treatment will have a future field of great value and usefulness in a host of dermatologic affections of infectious nature.

DR. JOHN A. FORDYCE, New York City: I would like to put on record two cases of infection of the skin in which the autogenous vaccines were used with good results. One was a case of vegetating dermatitis, with abscesses, in which the *Staphylococcus albus* was found. An autogenous vaccine was used for a number of months, and the patient improved remarkably, many of the abscesses disappearing. The patient gained eighteen pounds in weight, but finally reached the stage where improvement ceased. The second case was one of general infection with the *Staphylococcus aureus*. There were vegetations of the scalp and lower extremities, and from these lesions cultures of the organism were made. An autogenous vaccine was used, and the patient improved very much.

DR. A. RAVOGLI, Cincinnati: I had a case of sycosis folliculitis, which proved extremely obstinate, and in which I resorted to injections of vaccines of the *Staphylococcus albus* and *S. aureus*. The injection was followed by a very marked reaction. The patient developed a temperature of 102.5 F., which lasted about twelve hours, perhaps longer. Following this, the eruption began to improve, the pustules almost drying up. Then there was a recurrence of the pustular lesions and a second injection was given. In spite of the fact that the dose was increased, the reaction was not so marked as in the first instance. Following this the pustules again partly dried up, and the patient left the hospital, but returned in a worse condition than before. Further injections were tried, but as they did not prove beneficial, they were stopped, and external remedies were substituted.

DR. ALFRED POTTER, Brooklyn: We have had some experience with the vaccines in Dr. Winfield's service at the King's County Hospital in Brooklyn in the treatment of pustular and pemphigoid conditions. In one case of bullous eruption, of the hemorrhagic type in which we isolated a bacillus of the colon type, the patient was apparently going to die, but recovery took place under the vaccine treatment.

DR. HENRY H. HAZEN, Washington, D.C.: In the dermatologic department of the Johns Hopkins Hospital we have used vaccine treatment in about twelve cases a week. In one case, that of a student with an eruption of the nose resembling pustular acne, we first tried the staphylococcus vaccine without effect, then a vaccine made from the acne bacillus also without effect. A culture was made, showing an unidentified bacillus, and under the use of a vaccine prepared from this rapid improvement resulted. I believe that one reason why we frequently have poor results from a stock vaccine is that the eruption is due to a different organism. I feel that if stock vaccines do not work we should make a culture from the lesion and prepare our vaccine from this.

Now, a word as to the use of Bier's hyperemia in conjunction with the vaccine treatment. The reason for using a vaccine is as follows: The lesion is so localized that the toxins from it do not enter the general circulation sufficiently to stimulate the body cells to the production of the necessary amount of antitoxin. Vaccine, however, enters the general circulation and causes the production of antitoxin. Now, if the necessary amount of toxin can not get to the body, it is also probable that the necessary amount of antitoxin can not get to the lesion, but a cup will bring much more serum to the part, hence more antitoxin.

DR. H. R. VARNEY, Detroit: In testing the clinical value of this suspension, I confined its application to the treatment of furunculosis in order to determine, so far as possible, its efficiency. My experience with the use of the stock vaccine in acne has not been uniformly good. The infection is too often secondary to an abnormal condition of the skin, and while one may get temporary improvement, recurrences are most likely to take place. The most important question in connection with this discussion is: Can we simplify our technics so as to use a stock suspension? In the report which I made two years ago I stated that autogenous vaccines were more efficacious than the stock vaccine. In one of my cases (that of a physician who has long been a sufferer from boils) I had a special autogenous vaccine made. This was tried, with several recurrences, but the patient had not further recurrence after three inoculations of the *Staphylococcus aureus* suspension composed of 23 strains. I am strongly in favor of aiding the vaccine treatment by increasing the blood supply to the parts by the Bier hyperemic cupping method.

The age of the vaccine is a very difficult point to determine. The fact that one patient responds as readily to a vaccine that is six months old as another does to a freshly made vaccine does not throw much light on the value of the age of the vaccine, and *vice versa*.

Traveling Cooking Schools.—In Germany, to teach peasants how to cook cheaply and well, traveling cooking schools are sent about. When we secure a national health department this can be looked forward to in this country—as well as traveling schools of instruction on many other subjects related to the health of the people.

CHLOROFORM RATHER THAN ETHER ANESTHESIA IN TUBERCULOSIS *

JOSEPH WALSH, M.D.
PHILADELPHIA

Ether has been the anesthetic for so many years along the northeastern coast of the United States that it is almost heresy to even discuss it; yet experience seems to show that it is either very irritating to the lungs or stimulating to a tuberculous process in the lungs and hence should not be used when there is question of pulmonary tuberculosis. Surgeons generally admit that ether is irritating to the lungs and yet they not only continue to administer it in cases of pulmonary tuberculosis, but also very rarely discuss the matter.

Wood's "Text-Book on Therapeutics" (thirteenth ed., 1906) recommends with Hewitt that in extreme emphysema, in chronic bronchitis attended by expectoration and dyspnea and in advanced pulmonary phthisis, chloroform or some other mixture containing chloroform should be employed. He adds that acute pulmonary disease especially contraindicates ether.

During the past six years I have never allowed my own patients with pulmonary tuberculosis to be operated on under ether when it was possible for me to prevent it. Moreover, all except one have been operated on under chloroform, and I have never seen any bad results that could possibly be attributed to this anesthetic.

During the same period I have seen a number of patients manifesting active tuberculosis of the lungs following operation, which activity appeared from a study of the history to be due either to the operation itself or to the ether anesthesia. The common operations in these cases were for enlarged glands of the neck, fistulas, appendicitis, enlarged tonsils and adenoids.

The following represent several cases taken from my records without selection which I had opportunity to examine and watch for some time before and after an operation with anesthesia:

ETHER ANESTHESIA

CASE 1.—*History.*—A woman, aged 27, had four attacks of appendicitis before I saw her Sept. 12, 1906. Her brother had at the time advanced tuberculosis of the lungs. She showed a very small lesion slightly active at the right apex and some wasting, weighing only 109 pounds when her normal weight was 129. In the next three months she improved to practically perfect well-being and on Dec. 11, 1906, was operated on for appendicitis under ether anesthesia. I have never been able since to get her in as good condition as she was before the operation, and in the meantime the lesion at the right apex has increased so that it is now definitely down to the second rib.

CASE 2.—*History.*—A case of Dr. Stanton's which I also saw several times and which is quite typical is as follows: A woman, aged 25, was perfectly well till she developed ischiorectal abscess. The ischiorectal abscess was operated on one year ago under local anesthesia and later a radical operation was done under ether. Within three days the temperature had risen to 103 F., she began to spit blood, and since, tuberculosis of the lungs, which was then first noticed, has greatly advanced. She is now in a practically hopeless condition.

CHLOROFORM ANESTHESIA

CASE 1.—*History.*—A woman, aged 21, was first seen Nov. 4, 1902. She had an infiltration of the upper half of the upper lobe on each side and coarse moist râles all over both lungs. She expectorated profusely and her sputum contained an innumerable number of tubercle bacilli for a year and a half after I first saw her. While those signs remained practically the same, but after she had definitely increased in weight and was in pretty good constitutional condition she developed, Sept. 7, 1903, an abscess of the breast (probably tuberculous), which was opened and radically cleaned out under chloroform anesthesia without the slightest bad symptom following. The patient came to my office ten days later and continued her treatment, and for the past two years she has been entirely well, without active physical signs in the chest, and without any cough or expectoration. On account of the intense irritation already manifested in both lungs I should have expected this patient to do very badly under ether.

CASE 2.—*History.*—A woman, aged 29, was first seen on Jan. 24, 1905. On May 23, 1905, she developed tuberculosis, apparently having contracted it from her husband, who was in an advanced stage. Her lesion was at the right apex and was definitely apparent and active. She became entirely well, and in January, 1908, developed appendicitis. She was operated on under chloroform, was out of the hospital in fourteen days, and since then has manifested no pulmonary irritation. In this case the lung condition was apparently cured or at least quiescent when she underwent the operation.

CASE 3.—*History.*—A woman, aged 25, was first seen Feb. 16, 1903. She had infiltration of the top of both lungs extending to the second rib with some dissemination. She went to the White Haven Sanatorium, became entirely well and was a nurse there for two years, when she developed pneumonia. It took a year to get over the pneumonia and its toxic effects. Three months later she developed acute appendicitis, for which she was operated on under chloroform anesthesia. She was out of the hospital in two weeks and has never had any symptoms since.

CASE 4.—*History.*—A woman, aged 24, was first seen Aug. 18, 1904. She had markedly enlarged right cervical glands, cavity at the top of the right lung and infiltration of the upper half of the left upper lobe. Was operated on for the enlarged cervical glands shortly after I first saw her under chloroform anesthesia. She became sufficiently well to enter the Phipps Hospital Training School, where she remained for a year, when she broke down from overwork and eventually died. The chloroform anesthesia, however, appeared to have rather a good than a bad effect.

NITROUS OXID GAS ANESTHESIA

CASE 1.—*History.*—A man, aged 18, was first seen in March, 1908, at the White Haven Sanatorium. History showed that pulmonary symptoms first developed in April 1907. The physical signs were those of tuberculous infiltration of the upper half of the right upper lobe. About three weeks after admission to the sanatorium he developed a large ischiorectal abscess which was opened. A radical operation was performed under nitrous oxid gas on Aug. 1, 1908. The abscess was very large, making the operation correspondingly serious. He continued to improve exactly as before the operation, never showed the slightest activity after the operation and left the White Haven Sanatorium with the "disease arrested" at the end of September, 1908, and since then has remained in perfect condition.

The mere statement of the cases makes it appear that chloroform might even be somewhat curative, and this has been asserted by some, especially Holmes and Woodcock of London. I am not ready, however, to advocate chloroform in the cure, but do believe that in case of necessary operation with anesthesia, chloroform should be the anesthetic and not ether. Moreover, chloroform should be administered, not only in all cases of tuberculosis of the lungs, but in all cases in which tuberculosis of the lungs may be suspected, like, for instance, cases that manifest tuberculosis elsewhere, as in the cervical glands, in the ischiorectal region, etc.

732 Pine Street.

* Read before the Fifth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis, Washington, D. C., May, 1909.

Peritonitis Patients.—E. C. Rich, in *Denver Medical Times and Utah Medical Journal*, says that it is a well-established fact that patients with peritonitis stand short operations well, but long ones very badly.

ANATOMY AND PHYSIOLOGY OF THE TONSIL *

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The tonsils are two masses of lymphoid tissue placed one in each tonsillar fossa and projecting into the oropharynx. They are oblong in shape with the long axis vertical. They are from 1.75 to 2.5 cm. in length and from 1.5 to 2 cm. in transverse diameter. In children under the age of eight they are usually larger, from 2.5 to 3 cm. in long axis by 1.5 to 2.5 in transverse diameter. They are covered by stratified epithelium of

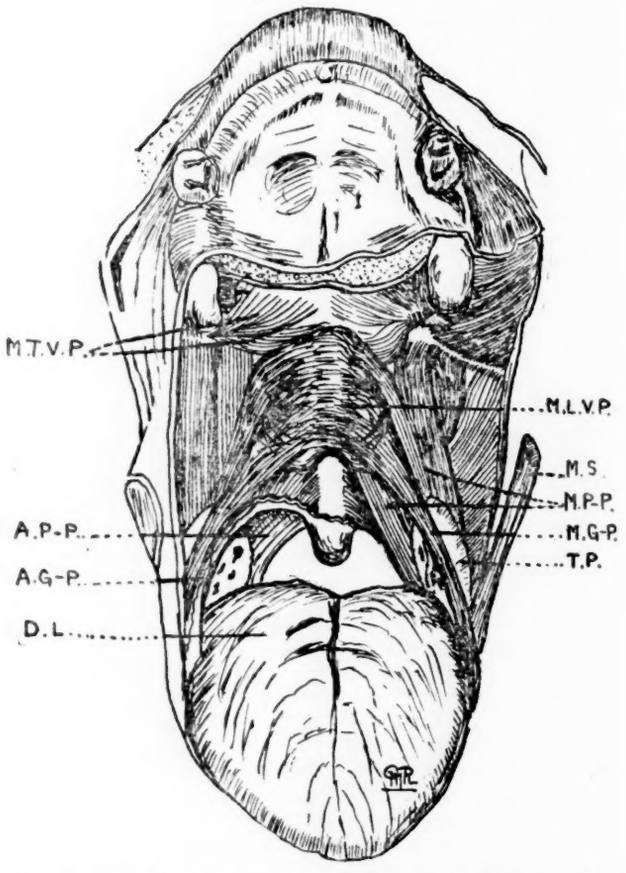

Fig. 1.—Showing anterior pillar (after Toldt): M. L. V. P., M. levator veli palatini; M. S., M. styloglossus; M. P.-P., M. pharyngopalatinus; M. G.-P., M. glossopalatinus; T. P., tonsilla palatina; M. T. V. P., M. tensor veli palatini; A. P.-P., arcus pharyngo-palatinus; A. G.-P., arcus glossopalatinus; D. P., dorsum linguæ.

the mucous membrane and their pharyngeal surface is marked by small apertures which indicate the openings of the crypts. The epithelial lining of the crypts is reflected from the surface covering.

The tonsils are composed almost entirely of lymphoid tissue which at intervals is aggregated into lymph nodes in which the lymph cells are more intimately arranged than elsewhere. The lymphoid tissue is surrounded by a dense capsule of connective tissue and the gland is divided into pockets by the trabeculæ, which are composed of connective tissue. The tonsil is part of the lymphatic circle which surrounds the oropharynx, called Waldeyer's ring.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In the neighboring part of the pharynx near the Eustachian tube, the upper part of the pharynx and the base of the tongue, there are masses of lymphoid tissue similar in structure to that of the tonsil, which also contain crypts.

FORMATION OF THE TONSIL

The tonsil makes its appearance about the fourth or fifth month of gestation. At birth it is a gland from 0.5 to 1 cm. in its long axis and from 0.25 to 0.5 cm. in lateral dimension. It develops as the child grows, reaching its full size between the sixth and eighth year of life. After this period it begins to atrophy and has disappeared by the twelfth year. At birth it is enclosed in the tonsillar fossa, being completely covered by the plica tonsillaris. Shortly after birth this membrane disappears, leaving the inner surface of the gland exposed to the oropharynx.

It is small at birth as compared with the thymus or thyroid gland. It is formed in the fetus by an invagination of the hypoblast which forms the capsule and the trabecular pouches or areas. The epiblast extends down into these trabecular areas and forms the crypts around which lympathic tissue develops.

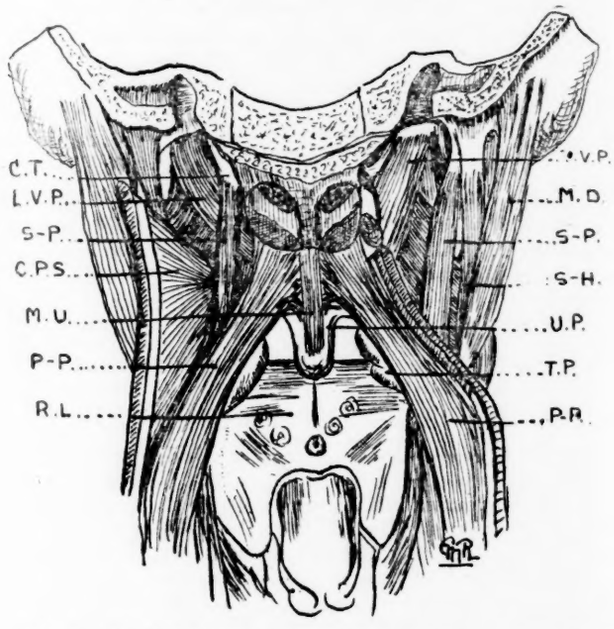

Fig. 2.—Showing posterior pillars (after Toldt): C. T., cartilago tubæ; M. L. V. P., M. levator veli palatini; M. S.-P., M. salpingopharyngeus; M. C. P. S., M. constrictor pharyngis superior; M. U., M. uvulæ; M. P.-P., M. pharyngopalatinus; R. L., radix linguæ; M. T. V. P., M. tensor veli palatina; M. D., M. digastricus; M. S.-P., M. stylopharyngeus; M. S.-H., M. stylohyoideus; U. P., uvula palatina; T. P., tonsilla palatina; M. P.-P., M. pharyngopalatinius.

ANATOMIC DESCRIPTION

The tonsil is situated between the anterior or glossopalatine fold and the posterior or palatopharyngeal fold. It is covered externally by the superior constrictor muscle. It does not completely fill the tonsillar fossa, there being a space above which is known as the supratonsillar space, or fossa, and it is sometimes found in unusual positions.

One case is reported in which the gland occupied a position on the posterior pillar just under the Eustachian tube. In two other cases the tonsil was attached to the posterior pharyngeal wall behind the uvula. In these cases the gland was pedunculated but contained well-defined crypts.

Palatal Pillars.—The anterior pillar is formed by the palatoglossus muscle, which is attached above to the aponeurosis of the velum and has its insertion in the tongue. Its action is to constrict the isthmus of the fauces and holds the tonsil back in place. The free edge is often attached to the tonsil by inflammatory adhesions from repeated attacks of tonsillitis. It may vary considerably in thickness and appear as a rough red membrane, with the outline indistinct or irregular. In other types it may appear so thin as to be almost transparent. At times the anterior pillar is found attached to the posterior pillar by a thin membrane which may be complete or partial, which is the remains of the plica tonsillaris (Fig. 1).

The Posterior Pillar.—This tissue is formed by the mucous membrane fold in which is contained the palatopharyngeus muscle. This muscle arises in the soft palate with fibers from its fellow of the opposite side. It passes partly above and partly below the levator palati and azygos uvulæ muscles. After forming the posterior pillar of the fauces the internal fibers are inserted into the pharyngeal aponeurosis and the external fibers pass forward to be inserted into the posterior border of the thyroid cartilage. The action of this muscle is to contract the isthmus of the fauces and to lift the soft palate. During inspiration the two pillars meet or nearly meet in the median line, thus shutting off the oral cavity from the respiratory tract (Fig. 2).

Plica Tonsillaris.—Some authors divide this membrane into two parts, the plica supratonsillaris and the plica triangularis. In truth the plica supratonsillaris is only a remaining part of the plica tonsillaris. The term plica triangularis should be discontinued because

Fig. 3.—A. P. D., A. palatina descendens; A. T., A. tonsillaris; A. M. E., A. maxillaris externa; A. L., A. lingualis; A. P. A., A. palatina ascendens. (Modified after Toldt.)

this membrane is not triangular in shape. Plica tonsillaris gives a better understanding of the correct significance of the membrane, which at birth is a normal embryonic tissue but which should completely disappear before the second year. If present after this age it is an abnormal remnant. When the plica tonsillaris does persist it is a continuation of the edge of the anterior pillar and may join the two pillars above, forming a band or fold over the upper part of the tonsil. The most common manifestations, however, are those tonsils which have the anterior edge covered by this membrane to a greater or less extent. It is impossible in many cases to define the edge of the anterior pillar.

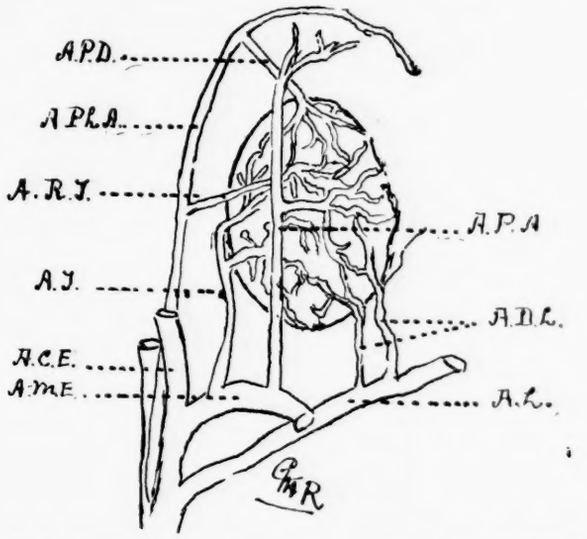

Fig. 4.—Schematic circulation circle of tonsil: A. P. D., A. palatina descendens; A. Ph. A., A. pharyngea ascendens; A. R. T., A. ramus tonsillaris; A. T., A. tonsillaris; A. C. E., A. carotis externa; A. M. E., A. maxillaris externa; A. L., A. lingualis; A. D. L., A. dorsalis linguæ; A. P. A., A. palatina ascendens.

In 1906 I read before this Section a paper describing the common types of this membrane, mentioning, among others, a case in which the membrane completely covered the tonsil in an adult.[1]

Supratonsillar Fossa or Recessus Palatinus.—The supratonsillar fossa is a triangular, conical space with the apex outward, and when normal represents a considerable cavity above the tonsil. Its walls are formed by the anterior and posterior pillars, while the floor is formed by the superior surface of the faucial tonsil. It varies in size in different individuals and may differ from the fossa of the opposite side. It may extend downward and outward, external to the tonsil, or up and outward into the soft palate. There may be sinuses extending off from this space in one or more directions. This fossa is of importance from the fact that there are crypts emptying into this space and when the communication with the pharynx is imperfect or absent a collection of caseous material may be extruded from the tonsil, held in this space. This condition is the great cause of the infections which pass through the gland into the cervical lymphatics, and also the cause of the different types of quinsy from decomposition of this extruded material held in the supratonsillar space.

CAPSULE OF THE TONSIL

The tonsil has a capsule extending from the free edge of the pillars covering the external surface of the gland which furnishes support as well as an investing covering. This capsule is composed of connective tissue about 1 mm. in thickness and is smooth on the external surface. From this capsule bands of connective tissue called the trabeculæ are given off, which extend to the inner surface of the gland dividing it into spaces

1. Faucial Tonsils, THE JOURNAL A. M. A., 1906, xlvii, 1725.

called the trabecular areas. In these trabecular bands lie the vessels, nerves, mucous ducts and lymph channels.

In some of the lower animals we find muscular tissue in these bands, but not in human beings.

Trabecular areas are supposed to be separate and distinct spaces, although Beck has injected bismuth paste into one crypt and has seen it communicate with four or five other trabecular spaces.

The youngest patient was eight years of age, while all the others were adults. This communication between crypts is at variance with my experience and I am inclined to the belief that the phenomenon observed by Beck is pathologic.

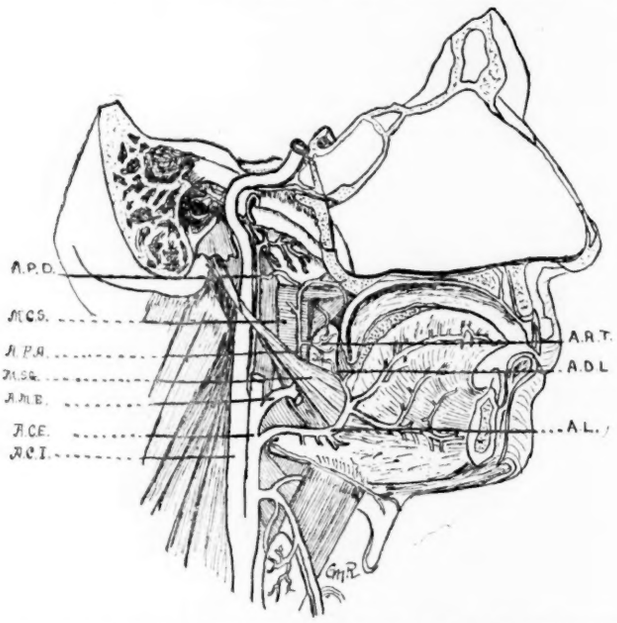

Fig. 5.—A. P. D., A. palatina descendens; M. C. S., M. constrictor superior; A. P. A., A. palatina ascendens; M. S. G., M. styloglossus; A. M. E., A. maxillaris externa; A. C. E., A. carotis externa; A. C. I., A. carotis interna; A. R. T., A. ramus tonsillaris; A. D. L., A. dorsalis linguæ; A. L., A. lingualis. (After Toldt.)

CRYPTS

The crypts vary in number and length. Some authors place the number at from fifteen to eighteen. I have seen many tonsils which had as few as four or eight. The number depends upon the size and condition of the tonsil examined. In the upper half of the tonsil the crypts are longer, usually extending downward and outward to the capsule on the external surface of the gland. Those opening below the middle of the gland extend outward or outward and upward. They are much shorter than the upper crypts. The upper crypts, especially those which empty into the supratonsillar fossa, are usually filled or partially filled with caseous material, while those emptying directly into the pharynx are seldom found with material in the crypt. This fact is easily explained by remembering that when swallowing the tonsils are squeezed by the palatal and superior constrictor muscles. This empties the crypt of material if there be no obstruction at its mouth, in which case the material cannot escape from the pressure of the obstruction.

If there be a tonsil which fills the supratonsillar fossa or a plica tonsillaris covering over the crypt walling the supratonsillar fossa off from the pharynx the material in the crypt can not be expelled, or if expelled is held in the supratonsillar fossa, and in this case it follows the line of least resistance, which usually is deeper into the crypt. Thus there may be a crypt, or number of crypts, enlarged at the distal end, or branching sinuses may be produced. This would perhaps account for the bismuth paste finding its way into three or four different crypts, as seen by Beck.

The crypt is lined by stratified epithelium. This membrane is much thinner than the surface membrane, and some observers assert that it disappears in the extreme depth of the crypt. At places in pathologic glands this crypt lining is very thin, from the presence of great numbers of lymphocytes, which seem to separate the lining membrane cells. The subepithelial tissue is also lost in the crypt, the lymphoid cells coming in direct contact to the crypt wall.

BLOOD VESSELS OF THE TONSILS

The blood supply of the tonsil is derived from (a) the tonsillar artery, which is a branch of the external maxillary near its origin from the external carotid; (b) from the ascending pharyngeal, which is given off from the external carotid just above the bifurcation of the common carotid; (c) from the ascending palatine, a branch of the external maxillary; (d) from the dorsalis linguæ by one or two branches from the lingual.

These arteries supply the tonsil and tonsillar space as follows:

(*a*). The tonsillar artery is given off from the external maxillary, a branch of the external carotid (Figs. 3 and 4). It passes upward and forward under the jaw and the internal pterygoid muscle and under the styloglossus into the loose fatty tissue of the pharyngomaxillary space. At or below the middle of the tonsil the artery gives off a branch which passes to the buccopharyngeal fascia which covers the superior constrictor muscle externally. Here the artery divides into a superior and an inferior branch. These two branches pass through the superior constrictor muscle and divide

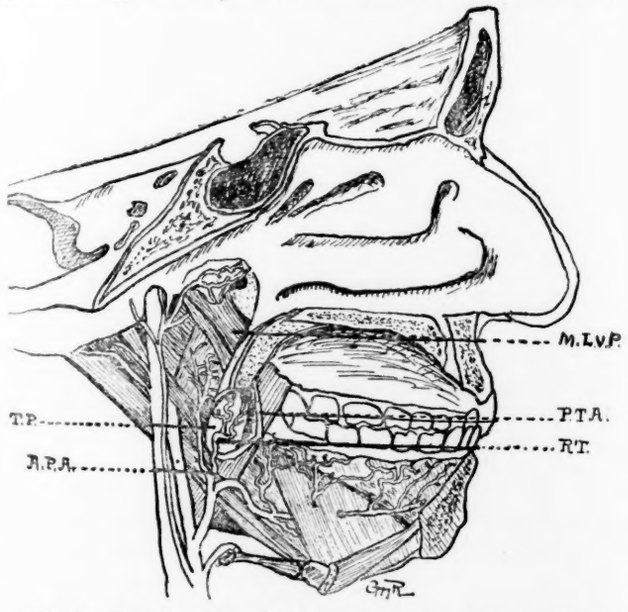

Fig. 6.—T. P., tonsilla palatina; A. P. A., A. palatina ascendens; P. T. A., pillaris tonsilla anterior; R. T., ramus tonsillaris; M. L. V. P., M. levator veli palatini. (After Toldt.)

on the capsule of the tonsil into numerous ramifying branches, which enter the tonsil along the trabecular bands. In hypertrophied tonsils this artery is sometimes large and may cause troublesome hemorrhage.

(*b*). The ascending pharyngeal is a small branch of the external carotid. It is a long, slender vessel, deeply

seated in the neck beneath the other branches of the external carotid and the styloglossus muscle. It arises from the back part of the external carotid near the origin of the vessel and passes up to the under surface of the base of the skull, ascending the neck between the internal carotid and the side of the pharynx, lying on the rectus capitis anticus major muscle. It gives off a tonsillar branch opposite the tonsil which passes forward on the superior constrictor muscle, which it pierces and then divides into ramifying branches on the tonsil.

It also sends branches to the Eustachian tube and soft palate. Above the edge of the superior constrictor muscle it gives off the descending palatine which passes under the constrictor muscle and anastomoses with the ramifying branches of the tonsillar or ascending palatine artery (Figs. 3, 4, 5).

(*c*). The ascending palatine, a branch of the external maxillary, passes up between the styloglossus and stylopharyngeus to the outer side of the pharynx, after supplying these muscles, the tonsil and the Eustachian tube (Figs. 5, 6). It divides near the levator palati into two branches; one follows the course of the tensor palati, supplying the soft palate and palatine glands, the other passing to the tonsils, which it supplies, the branches anastomosing with the tonsillar artery when present and descending palatine branch of the ascending pharyngeal.

(*d*). The dorsalis linguæ arises from the lingual artery at the anterior margin of the hyoglossus muscle, ascending to the dorsum of the tongue. It supplies the mucous membrane of the tonsil, the palatine pillars and the epiglottis, anastomosing with its fellow from the other side and the ascending palatine or tonsillar artery (Figs. 4, 7, 8).

ANATOMIC RELATIONSHIPS

The tonsil is in relation in front, with the anterior pillar; internally, with the oropharynx; above, with the supratonsillar space; externally, with connective tissue external to which lies the superior constrictor muscle of the pharynx. "The pharyngomaxillary space lies external and behind the tonsil. The "pterygopharyngeal space[2] is an irregular conical space, more or less triangular in cross section (Fig. 9). It contains a varying amount of fatty areolar tissue, in which lie the ascending palatine and tonsillar arteries. It is bounded externally, by the internal pterygoid muscle; internally, by the wall of the pharynx; posteriorly, it communicates with the fatty tissue of the pharyngomaxillary space which lies adjacent to the posterolateral wall of the pharynx. In the pharyngomaxillary space lie the internal and external carotid arteries, the internal jugular vein with its branches, the vagus and hypoglossus nerves and the styloid muscles. The tonsil rests on the medial side, and is therefore separated by the fascia and fat of the space from the pterygoid muscle and mandible against which it is pressed."

The internal carotid lies backward from the tonsil at a distance of 1.5 cm. and the external carotid backward and outward at a distance of 2 cm. They are therefore separated from the tonsil by the superior constrictor and the stylopharyngeus and to some extent the styloglossus muscle (Figs. 1, 2, 9).

The Eustachian Tube.—The Eustachian tube lies just above and a little behind the tonsil at a distance of 1 to 1.5 cm. and in cases of hypertrophy of the gland upward and outward it often extends along the course of the tube, causing tubal occlusion or inflammatory reaction by continuity of tissue (Fig. 2). This is a frequent cause of tinnitis aurium.

CERVICAL LYMPHATICS

The tonsil has for its afferent lymphatics the deep branches from the nose and some branches from the tongue. The efferent branches empty into both superficial and deep cervical chains through the peritonsillar glands which lie external to the internal jugular and in close relation to it. (This chain encircles the jugular.) These glands can be demonstrated in children as the glands commonly removed by surgeons for tuberculosis. The lymph from this chain of glands is emptied into the jugular trunk, which, with the lymph from the subclavian trunk, is emptied directly or by means of the thoracic duct into the vena cava. There are numerous anastomotic branches between these glands, and the flow of lymph is not always in one direction. It may flow in any direction, seeking the line of least resistance through these anastomotic branches. This accounts for infection being carried differently at different times. If the current were constant in its direction infection would travel in one direction only.

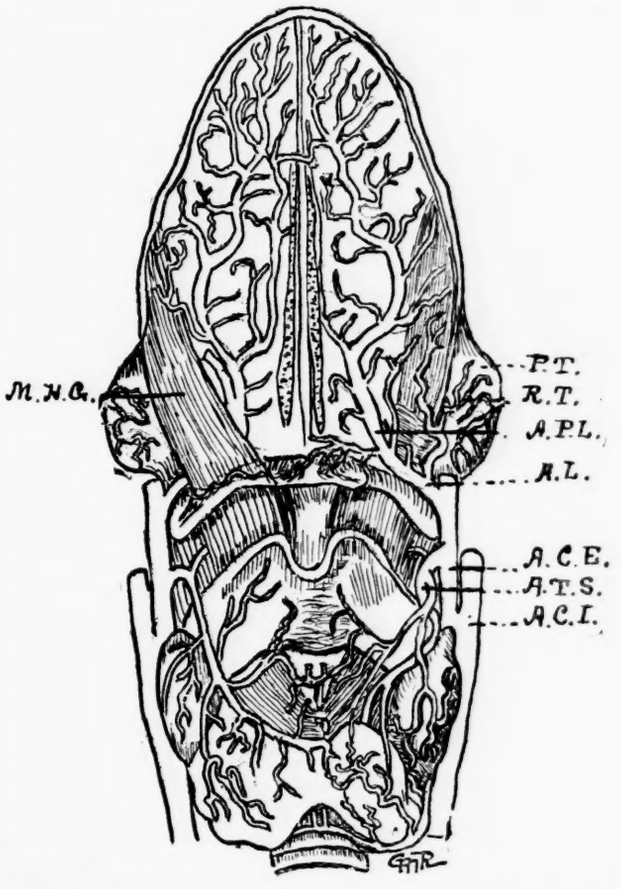

Fig. 7.—M. H. G., M. hyoglossus; P. T., tonsilla palatina; R. T., ramus tonsillaris from A. palatina ascendens; A. P. L., A. profunda linguæ; A. L., A. lingualis; A. C. E., A. carotis externa; A. T. S., A. thyroidea superior; A. C. I., A. carotis interna. (After Toldt.)

PHYSIOLOGY OF THE TONSIL

The true function of the tonsil has to do with early life and at birth the gland is so small as to be unimportant. It attains its full development by the sixth or eighth year and then begins to atrophy. By the age

2. Wilson: Anatomy and Physiology of the Tonsil, THE JOURNAL A. M. A., May 26, 1906, xlvi, 1593.

of twelve or fourteen it has completely disappeared or shows as a hypertrophied or a cicatricial mass between the palatine pillars. Any tonsil which is visible to any marked degree later than this may be considered as a morbid growth due to disease.

It has been stated by some writers that children with adenoids and enlarged faucial tonsils are backward mentally. In a report of examinations of school children those of certain ages were compared both as to the presence of lymphatic growths and the grade obtained in school. It was determined that at the age of six 40 per cent. of children had adenoids and tonsils; those at the age of eight, 32 per cent.; those at the age of ten, 20 per cent., and those who had reached the age of twelve had 15 per cent. Therefore, if children of six years of age be compared with those of eight we will find 8 per cent. more having adenoids and tonsils than those at eight years. Children at eight years will

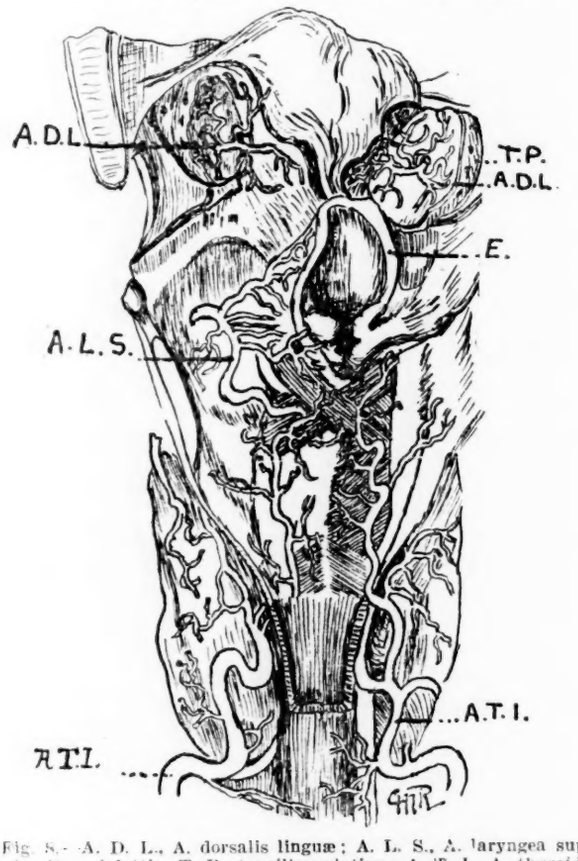

Fig. 8.—A. D. L., A. dorsalis linguæ; A. L. S., A. laryngea superioris; E., epiglottis; T. P., tonsilla palatina; A. T. I., A. thyroidea inferioris. (After Toldt.)

have 12 per cent. more than those at ten, while those at ten will have 5 per cent. more than those at twelve years. The backward student will have a less percentage than his associate in school who is younger and brighter in his school work. This statement must be modified, however, because students of eight years will be few in number and of these few probably all will show the presence of adenoids and tonsils, which might prove the child with these growths was really backward.

Clinically, nearly all children at six have adenoids and tonsils; at eight, probably 85 per cent.; ten, 35 per cent., and at twelve, about 15 per cent.

It has always been understood that the tonsil was responsible for most of the diseases of childhood and many of the circulatory, respiratory, as well as nervous diseases.

It is probable when the child has a pathologic condition of this structure that all kinds of infections may occur. The tonsil can be infected by cultures applied on the investing membrane and more easily by introduction of bacteria into the crypts where the mucous lining is less of a barrier on account of its thinness. Various infections may be traced to the tonsil as a portal of entry, but this phase of the subject is not in the scope of this paper. Some authors claim the tonsil as a part of the digestive tract, basing their view on the idea that in respiration, unless the gland is pathologically hypertrophied, the tonsil is cut off from the ingoing current of air; because when the mouth is closed in the act of respiration the tongue is pressed back and the posterior pillars contract so that they nearly, if not quite, meet in the middle line. This presses the faucial tonsil against the base of the tongue and covers it by the posterior pillars, so that the ingoing current of air does come in contact with it.

It is said that the lymphocytes pass into the stomach, having escaped from the tonsillar crypt, and in the stomach become the salivary follicles aiding in digestion. It is also said that particles of food are forced into the tonsillar crypt during deglutition and here act as irritants, being partially at least digested in this place or produce, as a result of their influence on the tonsil, the production of antibodies or antitoxins.

In contradiction to this theory it is found that if pieces of healthy tonsils are ground with water and the solution filtered the fluid produced will have no effect on albumin or beef broth, showing the absence of enzymes in the product of the tonsil, and therefore that the digestive function is *nil*. The same fluid placed in a test tube with typhoid or the commoner forms of germs all have a like turbidity, showing the bactericidal property wanting.

One author has the idea that the endothelium in the crypt undergoes a transformation into lymphocytes which enter the tonsil from without inward, but this has never been proved to the satisfaction of others.

We are told by Stöhr that the true physiologic function of the tonsil lies in the lymphoid nodules. In these nodules the center, which is termed the germ center, breaks down, changing the lymphoid tissue into lymphocytes. These lymphocytes are migratory cells and escape into the crypt in quantity through the mucous membrane lining, and thus find their way to the surface of the gland, carrying with them digested bacteria and effete material—phagocytosis.

It is known that the presence of lymphocytes exercises no influence on bacteria unless aided by some more developed leucocyte. If there is inflammation or infection in a gland it is the function of the eosinophiles to pour out opsonins, after which the lymphocytes will march up in quantity, surround, digest and carry off the residue. It is probable that the eosinophile is a product of some organ other than the tonsil, so the tonsil can not be considered an organ of destruction for bacteria, as it cannot do this without the assistance of some other tissue, probably the spleen or bone marrow in which the eosinophile is formed, which seems essential to the phagocytotic function.

So far as I can learn, the physiology of the tonsil, as we know it, has been limited to the study for the most part of pathologic glands, and has not included the so-called normal tonsil, which marks its decline after the sixth or eighth year.

If the tonsil in a normal state is removed *in toto* there is no disastrous after effect, as in the case of the thyroid. On the other hand, the individual is improved in health; in the young this is simply from the fact that respiration is carried on in a proper way by not being impeded by a mass which acts as an obstruction.

After the age of six or eight years, when the function of the tonsil begins to disappear, the general condition of health is invariably improved by the removal of the gland. It is a common occurrence for these patients to gain one or two pounds a week after removal of the glands. This is produced in one of two ways; first, by the removal of an obstructing mass to respiration; second, by removal of an infecting focus.

It is probable that the lymphatics of the nose, nasopharynx and oropharynx, have some function with the formation of the face and the accessory cavities of the nose, and therefore it appears to me that their function is an ancestral or developmental one. This is reasoned from the fact that they are present *ad maximum* during the time when such changes are taking place. Thus at birth the superior maxilla is only partly formed. The

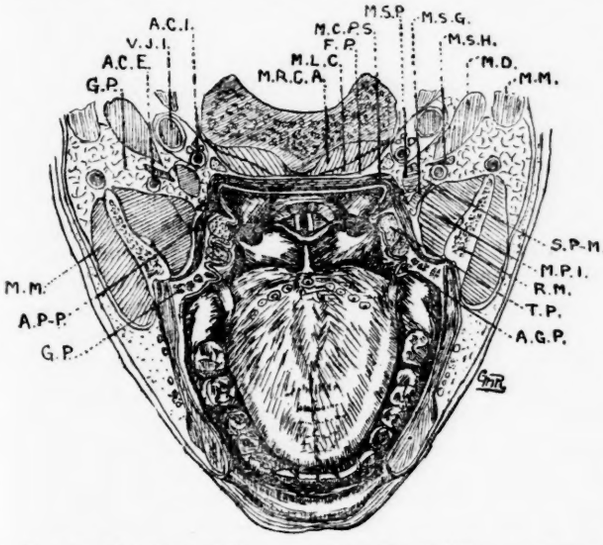

Fig. 9.—Showing relation of parts after Toldt): A. C. I., A. carotis interna; V. J. I., vena jugularis interna; A. C. E., A. carotis externa; G. P., glandula parotis; M. R. C. A., M. rectus capitis anterior; M. L. C., M. longus capitis; F. P., fascia prævertebralis; M. C. P. S., M. constrictor pharyngis superior; M. S. P., M. stylopharyngeus; M. S. G., M. styloglossus; M. S. H., M. stylohyoideus; M. D., M. digastricus; M. M., M. masseter; S. P. M., spatium pharyngomaxillaris; M. P. I., M. pterygoideus interna; R. M., ramus mandibulæ; T. P., tonsilla palatina; A. G. P., arcus glossopalatinus; A. P. P., arcus pharyngopalatinus.

orbit is well formed, as is the mouth, but the mouth lies almost in direct contact with the lower border of the orbit, the rudimentary teeth being the only tissue separating the two cavities. The body of the sphenoid bone is not developed, the sphenoidal sinus being a small cavity not more than 2 or 3 mm. in diameter; the ethmoidal cells are mere depressions in the middle turbinal; the frontal sinus can not be seen, as the two frontal plates have as yet not separated, and the antrum of Highmore is only a small slit 3 or 4 mm. in length, situated between the nasal cavity and the infraorbital foramen, just inward and below the orbit, while the nasal bones are simply small projections in the beginning of formation.

It seems to me that the lymphatics of the nose, nasopharynx and oropharynx were occupied with the process of katabolism after the blood had at least in part finished the process of anabolism. In this manner the broken-down tissue finds its way into the deeper lymphatics of the nose and from thence through the postpharyngeal, tonsillar and submaxilliary glands into the general lymphatic current. It may also be possible that the tonsils are stimulated by this process into producing some substance which is given to the blood, which in turn regulates some function which is active at this period of tissue formation and absorption.

It is evident that if we are to ascribe any function to the glands it must be one which is active during the first part of the child's life or between the first and sixth or eighth year, at which period the gland has already passed its height of usefulness in the economy and is beginning to disappear by atrophy.

It is claimed that the tonsil, in particular cases, has come to have a function in modulating the voice. This, however, I look on as a mere matter of education, and the singer or speaker would have come to modulate the voice just as well without this gland as with it. On the other hand, we have all seen cases in which voice was increased in tone and volume by the removal of these growths. The richness of quality and volume of tone is often added to 100 per cent. after the enucleation, provided the pillars remain intact and are not bound down or together by cicatricial tissue. I have observed four patients in whom there was loss of voice who were relieved by removal of the tonsils. These individuals are usually affected in one register, more frequently the middle.

The removal of tonsils in the adult can not be studied in this connection, however, as the presence of such growths is a pathologic phenomena.

I still believe that tonsils after the sixth or eighth year of life are pathologic in their character and as such are productive only of detrimental influence in rendering the individual unable to cope with infections of various kinds, and thereby working a hardship to the general economy.

It is true that I am making a rather sweeping statement as regards the function of this gland and one which may bring much criticism by the members of the profession, but it seems to me the investigations so far as published by the various writers are of little value, having been observed from an erroneous viewpoint.

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CONDITIONS OF THE FAUCIAL TONSIL WHICH CALL FOR OPERATIVE INTERFERENCE*

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The conditions of the faucial tonsil which call for operative interference may be divided into two classes: (1) Simple hypertrophy causing interference with respiration; (2) diseased conditions of the tonsils themselves causing local or constitutional infection.

SIMPLE HYPERTROPHY

While tonsils have been removed from time immemorial—it was certainly done by the ancients—it is only of late years that much study has been given to the evils of mouth breathing and attention drawn to the

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

improvement in the health and morale of children after proper breathing has been restored.

It is by no means unusual to see children who are irritable and often possessed of vicious traits become gentle and kind, dullards to show a new vivacity and the slovenly youth to awaken to a sense of order and decency. Witnessing these results, we often hesitate to mention the lasting effects and often marvelous changes subsequent to tonsillar operation, lest we be considered too enthusiastic.

This subject, however, has been taken up by educators and public health officials and has their hearty approval. One of the earliest to note the improved morale of children whose tonsils had been successfully removed was Dr. John J. Cronin, at that time chief of the department of child hygiene of the Health Department of New York City.

In the efforts to stamp out trachoma all defects among school children were noted, and a large number of children were found with hypertrophied tonsils, usually associated with an adenoid growth. These children were advised, by postal cards sent to the parents, to see their physicians, and so it came about that a large number of school children appeared in the various dispensaries of the city. At first the school nurse or inspector of the department accompanied them, but afterward the parents brought the children, and a large number were operated on. Among them were one class of children from a school where those who were continuously deficient were sent, so that it was known as the school for defectives. The principal of this school noticed, to her surprise, that some of these children improved wonderfully in their studies, as well as in deportment, and she became an enthusiastic advocate of an operation that would help these especially unfortunate children to become useful members of the community. Some of the children showed an improvement of 100 per cent. over their former ability to work and in behavior.

A brief report from Cronin's[1] description as to what happened subsequently may be of interest:

> There was a special class of defective children, composed of backward and incorrigible children, truants and so-called impossibles examined by an inspector who devoted his entire time to diseases of children. Of 150 children, 13 had defective vision and the remainder had an adenoid or enlarged tonsil or both. Special effort was made during six months to have these children operated on. Parents were neglectful (often too poor to lose the time to go to the hospital for operation, frequently not having car fare to travel the distance), and only 56 of these were attended to.
>
> It was thought justifiable to get what scholastic results would be obtained if these children were operated on collectively. Written consent was readily obtained from the parents to perform the necessary operations, and on June 21, 1906, 81 children were operated on in the afternoon by my two assistants, Dr. Yankauer and Dr. Ballin and myself.
>
> Six months later 76 of these children were re-examined and without exception they had all been promoted and were doing well in advanced grades.

To meet the exigencies of the examination by the medical inspectors of schools certain rules have been formulated for their guidance. It must be remembered that no previous history is obtainable, and also that no further examination than depressing the tongue with a wooden spatula (which is immediately thrown away) is permissible. Hence, only such tonsils as interfere with proper respiration, thus retarding development, are considered in the recommendation for removal. Full notes of the condition found are made, a notice of the recommendation of the inspector is mailed to the parents or guardians of the child and evidence is subsequently required that a physician has been consulted. When there is neglect the school nurse often interviews the parents and tries to convince them of the need of the child. Occasional complaints have arisen that children were refused instruction unless they were operated on, but investigations show these to be apparently unfounded. This public work of such vast importance has now been taken up throughout the civilized world and none of us will gainsay its appropriateness and lasting value.

1. Jour. New York Inst. of Stomat., December, 1907, ii, 272.

DISEASED CONDITIONS OF TONSILS CAUSING INFECTION

Passing to the second classification I shall deal first with such affections of the tonsil itself that indicate the need for extirpation and secondly with constitutional disturbances associated with and dependent on a diseased state of the tonsil. The most common of all these in the first category is acute lacunar or follicular tonsillitis, with its onset of high fever and general disturbance, sore throat and deposit on the tonsillar surface, the latter often making a clinical differentiation between it and diphtheria impossible without a bacteriologic examination.

It is most common in children, and recurrences of the attack are the rule. In some children the recurrences are so frequent as to make them lose much time from their school work for many months of the year.

I recall the history of two brothers in my practice who had had so many attacks of tonsillitis of this variety that they were rarely free from attacks for two consecutive months. A physician previously consulted invariably injected antitoxin as a precaution, and they dreaded his approach. Extirpation of both tonsils with adenoids has cured the boys completely.

Peritonsillar abscess is practically a disease of adult life, although, through the courtesy of Dr. Sara Welt, I have recently seen this affection, in which streptococci were found, in a child of ten months. Cornet[2] reports a case of this affection in a child aged nine months. Here also recurrence is the rule, unless the tonsil is effectively removed.

Milder degrees of inflammation in the tonsillar crypt occur often—a raw surface is left and particles of food become attached and undergo putrefaction. If persistent these conditions are apt to give rise to much annoyance, and the remedy lies in operative procedures. One of the most persistent of affections of the tonsil is mycosis leptothrica, or hyperkeratosis, "characterized by white projections from the crypts and orifices of the lymph follicles on the posterior and lateral pharyngeal walls and on the lateral glosso-epiglottidean folds" (Wood). This does not, as a rule, create much discomfort and becomes a source of annoyance chiefly when discovered by the patient.

I saw a young woman with this affection, who had been mistakenly quarantined for diphtheria, and when the bacteriologic report was negative the suggestion of tuberculosis was made. She came in great excitement but left in high glee with a paper marked "mycosis leptothrica" to show her attending physician. In this case a complete cure was obtained by extirpation of the tonsillar mass in a much more rapid manner than the

2. Bull. de laryngol., otol. et rhinol., 1903, vi, 35.

tedious one of cautery to the individual growths. We are accustomed to view this affection among the minor ones, but Metzner[3] reports a case with fatality.

Cartilage and bone formation of the tonsil are by no means frequent and cases have been recorded of recent years by Reitmann,[4] Compaired,[5] Newcomb,[6] Genter,[7] Ruckert,[8] Schweitzer,[9] Carter,[10] Halkin,[11] Landa,[12] Scheven,[13] and Anders.[14] The latter reports a tonsillolith weighing 147 grains. Schweitzer[9] found bone and cartilage foci in 11 of 33 bodies examined. There were several such in one and the same tonsil and a transition of the foci into connective tissue was often noted. It is not a congenital disturbance, but is due to a metaplasia of the connective tissue into cartilage and bone as a result of previous inflammation. Microscopically there is found atrophy of the lymph adenoid tissue and connective tissue proliferations. Total extirpation is advisable.

Of the benign growths occurring in the tonsil, in which complete extirpation is advisable, Mancioli[15] and Glas[16] have presented monographs. The latter records five cases, two of fibroma, one polyp of mucous glands, two teratoid new growths, and one a lymph vessel ectasia. Primary sclerosis is described by Glas[17] and Steiner.[18] Papillomata, true and false, are presented by Yearsley[19] and Tweedie[20] showed a tonsil apparently composed of a mass of papillomata. Blanc[21] reports a polyp of the tonsil and a dermoid polyp is reported by Angier and Lavrand.[22] Teratoid growth of an interesting nature is noted by Iwata[23] and Fullerton.[24] Lipoma of the tonsil is recorded by Theisen,[25] Deile,[26] Zolki,[27] and Sommer.[28] Epithelial cysts of the tonsil are recorded by Degny,[29] and Wright[30] in his usual thorough manner describes cysts in lymphoid tissue. A lymphoid tumor extirpated and cured is reported by Lavrand.[31] Excision of a tonsil affected with primary syphilis has been done by Wroblewski,[32] a procedure I hardly feel warranted in advising. Greene[33] has removed diseased tonsils and adenoid tissue to rid the throat of diphtheria bacilli. The malignant diseases of the tonsil, endothelioma, epithelioma, sarcoma, lymphosarcoma, and carcinoma, require more than extirpation of the tonsil and do not belong to the conditions under discussion.

The subdivision of this second class is constitutional affections entering the system by way of the tonsil and produced by tonsillar disease.

Ten years ago I presented my views and those of others on the tonsils as portals of infection,[34] and stated that certain forms of infectious diseases follow closely on tonsillar affection, the same micrococci existing in the former as in the latter, and hence are mentioned as being tonsillar in origin. The list of diseased states that follow the various forms of angina has become formidable and we should regard the tonsillar affection with the import its existence requires. A year ago I[34] stated that infection in rheumatism and gout enters the system by way of the mouth, the opinion of the majority being that the chief point of entrance is the tonsil. A careful study of the voluminous literature of the subject does not change in any way the opinion then expressed, and for the requirement of the matter under discussion we quote from Adler:[35] "I would most emphatically endorse the position taken regarding the treatment of the tonsils, viz., that inflamed tonsils are a source of danger to the individual possessing them and that recurrent tonsillitis constitutes a positive indication for the ablation of the tonsils."

The masterly essay of Wood[36] on the importance of the upper respiratory tract in the etiology of cryptogenetic infections, especially in relation to pleuritis, is so recent and contains so full a reference to the important literature of the subject that repetition would be superfluous. He calls attention to the following affections associated with or dependent on tonsillar disease: Tuberculosis of the lungs with and without tuberculosis of the tonsils, rheumatism, general infection, nephritis, tenosynovitis, endocarditis, bronchitis, pneumonia, pleurisy, appendicitis, jaundice, phlebitis, meningitis, parotitis, skin and eye lesions.

The relation of angina tonsillaris and appendicitis has been discussed editorially in THE JOURNAL of the American Medical Association,[37] and Weber[38] reports a case of these conditions occurring.

P. K. Brown[39] refers to a case of nephritis after tonsillitis and says that the kidney complication is more frequent than is generally known, and he mentions three other cases, apparently traceable to diseased tonsils. These are acute mania, septicemia, and leukemia. The *New York Medical Record*[40] quotes Hougarde as describing six cases of acute nephritis associated with hypertrophied tonsils. One was mentioned as showing the good effects of a tonsillectomy on the nephritis. H. B. Gardner,[41] writing on secondary effects on the system which may be produced by chronic enlargement of the tonsils, says the hypertrophied tonsils may be a causal factor for varicose veins of the leg and hernia. Regarding the relation of the tonsil to hyperthyroidism I quote from a recent article on "Some Relations of the Thyroid Gland" by S. P. Beebe.[42] He says:

> In another group of cases there is fairly good evidence that the disturbance of any infectious disease, notably tonsillitis and typhoid, has been the primary event in the abnormal thyroid physiology. It has been customary to explain these cases by supposing that the thyroid is called into unusual activity in order to combat the toxemia in the disease and that from this beginning the vicious circle is continued. There is no doubt that hyperthyroidism often follows tonsillitis, but Beebe believes this may follow as a result of a vasomotor dis-

3. Berl. klin. Wchnschr., 1889, No. 29, p. 653.
4. Monatschr. f. Ohrenh., 1903, xxxvii, 321.
5. Arch. internat. d. laryngol., Paris, 1904, xviii, 155.
6. Med. News, New York, Sept. 24, 1904, p. 581.
7. Vrach. Gaz., 1904, x, 789.
8. Virchow's Arch. f. path. Anat., 1904, clxxvii, 387.
9. Diss., Freiburg, 1905.
10. Med. Rec., New York, Feb. 4, 1905, lxvii, 174.
11. Bull. Acad. roy. de méd. de Belgique, 1905, xix, 383.
12. Rev. de med. y. chirurg. de la Habana, 1907, xii, 495.
13. Arch. f. Laryngol. (Fraenkel's), xx, 1907, 20.
14. THE JOURNAL A. M. A., April 11, 1908, l, 1191.
15. Arch. ital. di otol., 1902, xiv, 471.
16. Virchow's Arch. f. path. Anat., 1905, clxxxii, 91.
17. Wien. klin. Wchnschr., 1903, xvi, 890.
18. Pest. med.-chir. Presse, 1903, xxxix, 380.
19. Med. Times and Hosp. Gaz., 1903, xxxi, 257.
20. Proc. Royal Soc. Med., Laryngol. Sect., 1907, p. 70.
21. Rev. hebd. de laryngol., 1906, i, 136.
22. Jour. Soc. méd. de Lille, 1903, i, 457.
23. Dai Nippon Ji-Bi-In-Ko-Kwa-Kwai Kwai Ho, Tokyo, 1906, xii, 101.
24. Brit. Med. Jour., 1907, ii, 963.
25. Albany Med. Ann., 1903, xxiv, 37.
26. Arch. f. Laryngol. u. Rhinol., 1903, xiv, 399.
27. Ztschr. f. Ohrenh., 1903, xliv, 222.
28. Arch. f. Laryngol., 1907, xix, 523.
29. Bull. et mém. Soc. Anat. de Paris, 1903, series 6, v, 487.
30. Laryngoscope, Sept., 1905, 681.
31. Rev. hebd. de laryngol., 1904, i, 113.
32. Gaz. lek., Warsaw, 1904, series 2, xxiv, 10.
33. Laryngoscope, 1908, xviii, 660.
34. THE JOURNAL A. M. A., Dec. 2, 1899, xxxiii, 1381.
35. THE JOURNAL A. M. A., Dec. 9, 1899, xxxiii, 1491.
36. Ann. Otol., Rhinol. and Laryngol., December, 1908, xvii, 355
37. May 11, 1907, p. 1602.
38. München. med. Wchnschr., 1902, xlix, 2171.
39. THE JOURNAL A. M. A., June 15, 1907, xlviii, 2024.
40. Med. Rec., New York, May 12, 1906, lxix, 757.
41. Lancet, Sept. 30, 1905, ii, 963.
42. Therap. Gaz., Dec. 15, 1908, p. 844.

turbance rather than to suppose that the altruistic action of the thyroid has continued to an ungovernable condition.

In all of these conditions cure is often found to follow tonsillar removal, but the surest and safest guide will be, bearing in mind the many lasting conditions that follow on a diseased state of the tonsil, to study these organs carefully and by prompt extirpation prevent the inroads of these dread disorders.

With this presentation of the subject I feel warranted in presenting the following conclusions:

Unusual hypertrophy, including the submerged and degenerate variety, recurrence of inflammatory affections, including benign growths, or evidence of a diseased state of the tonsil prejudicial to health, makes it imperative on physicians to advise thorough extirpation of the tonsil.

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REMOVAL OF TONSILS*

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Without going into the consideration of anatomic details, I will proceed at once to the discussion of some of the various methods of dealing surgically with diseased tonsils. The complete removal of all tonsillar tissue that is at the time or is liable in the future to become diseased, with the incurrence of the minimum danger

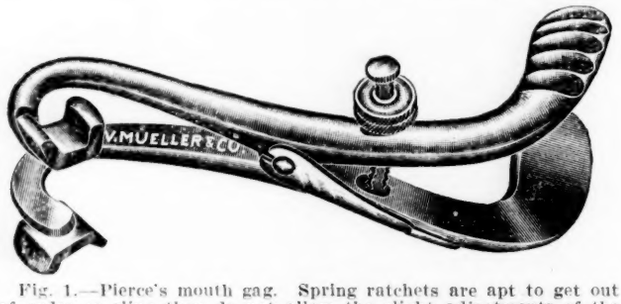

Fig. 1.—Pierce's mouth gag. Spring ratchets are apt to get out of order or slip; they do not allow the slight adjustments of the screw that is used for the setting mechanism of this gag.

from hemorrhage or infection, constitutes an ideal to which we should strive in our operative technic. Any procedure short of this falls short of the ideal. At the same time circumstances arise which will not permit of the more thorough-going methods, in which case we adopt one of the procedures for the destruction of the lacunæ. The best of these consists in slitting the lacunæ which may be reached by means of a bent knife, and afterward cauterizing them with nitrate of silver fused on a copper probe daily until as many as possible are made to heal open. This is followed by benefit in a great number of cases, but is never permanently satisfactory. The use of the cautery (ignipuncture) for this purpose or for destroying or removing tonsillar tissue, is not nearly so satisfactory as the cold methods, inasmuch as the pain at the operation and the reaction is very much greater and the results are not so satisfactory. If the tonsil is to be removed we may proceed in various ways.

In all cases there should be a period of preparation. It is a great mistake to underestimate the gravity of tonsillar excision. It is not an operation that should be performed at the office; it is necessarily a hospital operation, whether performed under a general or local anesthetic. The patient should preferably be sent into the hospital the day before the operation is to be performed. A careful history should be taken and general physical examinations made, together with a microscopical and chemical examination of the urine. Tonsils should not be operated on while in a state of inflammation, as this is the cause of the majority of severe hemorrhages following their ablation. Women and girls should not be operated on while menstruating. Special care should be taken to detect the status lymphaticus and to elicit a history of hemophilia; and on inspection we

Fig. 2.—The advantage of this tongue depressor is that it does not crowd the tongue backward, thus interfering with respiration, as does the broad depressor.

should be careful to note the presence of pulsations in or about the tonsils. This leads me to say that we can only partially ascertain what we wish to know regarding the tonsils by inspection, which should always be supplemented by palpation. In this way we can ascertain deeper pulsations, the extent of the tonsils as well as the presence of bony or other deposits in the tonsil, and the presence of a projecting styloid process.

A course of calcium chlorid for a week preceding the operation has an influence in reducing the hemorrhage at the time of operation. If there is doubt as to the coagulability of the blood, its index may be ascertained. The bowels are emptied by a cathartic the night before, and if necessary by an enema in the morning; no food is taken on the day of operating if the operation is performed in the morning and only a very light breakfast if performed in the afternoon. A hypodermic administration of a dose of atropin a half-hour before the operation in adults and older children, or of belladonna in young children, will decrease the amount of secretions during anesthesia.

ANESTHESIA

General Anesthesia.—This should be employed in all young children and in nervous adults. If adenoids are to be removed at the same time, as is usually the case, I am strongly of the opinion that deep narcosis is urgently to be advised. For this purpose, ether is used on account of its unquestionably greater safety over chloroform, although it has some disadvantages. The

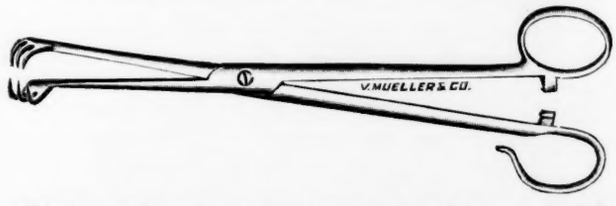

Fig. 3.—Tonsil forceps. One finger grip is left open in order that the wire loop may be more readily passed.

administration of the anesthetic may be by means of a pipe introduced around the corner of the mouth, the ether fumes being pumped from a receptacle by means of a double rubber bulb, or a closed mask may be used. The closed mask does very well if the anesthetist will

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

reapply the anesthetic whenever the operative procedures are interrupted, if only for an instant. The open or gauze mask is not nearly so satisfactory as the closed one, because with the former a deep anesthesia is very much more difficult to maintain. The advantages of deep, tranquil anesthesia can not be too strongly insisted on. There is greater safety for the patient; the operation proceeds much more rapidly, and with greater exactness. It must be remembered that the deep pharyngeal reflexes are among the last to disappear, and we may proceed with an operation on the mastoid or with an amputation of a limb at a much earlier stage than is best for a tonsil or any throat operation.

Fig. 4.—Pierce's tonsil knife.

In order to aid in the abolition of the deep pharyngeal reflexes, after the patient has become relaxed, we may swab the tonsillar regions with a 10 per cent. cocain in 1 to 1000 adrenalin solution. Occasionally, we may have cases in which ethyl chlorid may be a sufficient anesthetic, but these are rare. There can be no dissecting done, and the tonsillar tissue must be of that

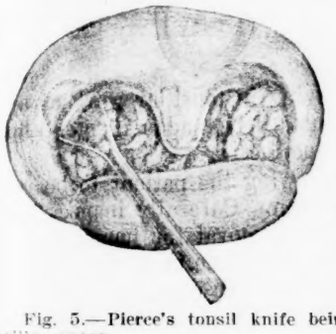

Fig. 5.—Pierce's tonsil knife being inserted into the supratonsillar space.

pedunculated type which may be properly removed by means of a tonsillotome. Nitrous oxid is less satisfactory than ethyl chlorid.

LOCAL ANESTHESIA

This is reserved exclusively for older children and adults who can be controlled. The tonsil, posterior and anterior pillars, posterior wall of the pharynx, and arch of the velum are painted over with a 10 per cent. cocain solution. This is also rubbed into the crypts and supratonsillar space, by means of cotton wrapped on a bent cotton applicator. The cocain solution is followed by adrenalin solution, 1 to 1000, applied over the same area, and when a surface anesthesia has been procured, a 1 per cent. cocain solution, containing two drops of 1 to 1000 adrenalin to the ordinary hypodermic syringeful is injected on each side at three points, namely, at the base, at the middle, and at the upper confines of the tonsil, ascertained by means of palpation; from three to five drops at each point is sufficient. I have found local anesthesia in tonsillar work, except in those cases of pedunculated growth, more or less disappointing. Especially is this true in cases in which there has been considerable previous inflammation, and in which the submerged tonsil is encased in plastic fibrous tissue. This is particularly true when the snare is used, so that it is better to use a cutting instrument, the knife or scissors, such as the Robertson, in removing tonsils under local anesthesia.

When the general anesthesia is complete, a mouth-gag is inserted in the left side of the mouth well back. The mouth gag may become a source of great annoyance if improperly tended. If the jaws are opened too wide, respiration is interfered with, especially in young children, and its constant or inopportune displacement is exasperating. If there are but two assistants the anesthetist should have full charge of the mouth gag from the beginning to the end of the operation and should be held responsible for its proper manipulation (Fig. 1).

POSITION OF THE PATIENT

The position of the patient is an important matter. Doubtless, operators become accustomed to various positions as they become accustomed to different instruments, but after an experience extending over a number of years with the various positions, I have adopted the one to be described. The patient is placed on the right side, with the right arm crooked beneath the body, and the right leg semiflexed. The right side is chosen as throwing less of a burden on the heart of the patient. A sand-bag is put under the head which is drawn over close to the edge of the table. Another large sand-bag is shoved snugly against the back in order to keep the patient from rolling backward, or better, a nurse is employed to keep the patient balanced on the right side. In this position, safety is insured against the danger of blood or excised tissue getting into the larynx.

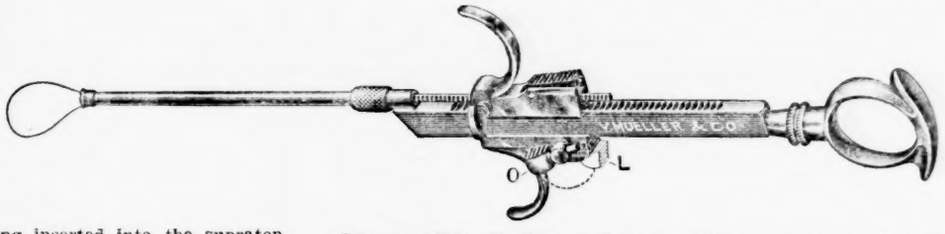

Fig. 6.—Pierce-Mueller tonsil-snare. The new snare consists of a flat steel bar having at its distal end a strong steel cannula with reinforced end. Notches are cut in the upper side of the steel bar and the lower side is milled out and contains the threaded rod for écraseur attachment. On this steel bar runs a carriage supplied with two half-curved finger-holds. In the upper portion of this carriage is an arrangement like a windlass and by pulling back the carriage (with wire-carrier and snare loop) this windlass drops into the notches in the bar and securely locks it, and prevents it from receding and letting loose the object once grasped.

On the lower side of this carriage is a lever in connection with a chuck, and this (when pulled backward) grips into the threaded rod which rests in the milled out part of the flat bar and converts the snare into an écraseur.

This new snare has none of the many springs of the older models of this type and there is very little chance for the instrument's getting out of order.

To load this snare push the carriage forward as far as it will go, by pressing on knurled lever A, set the wire-carrier so that the two holes only for the wire will show and place the ordinary snare loop in the wire-carrier. After placing the loop over the tonsil you may either pull right through, or, as the carriage locks itself by means of a ratchet, you can stop at any point. In order to set the snare as an écraseur, pull the lever below the carriage from O (open), to L (locked), then turn the ring at the end of the flat bar until the tonsil comes off. To put snare in position for reloading, unlock it and push forward on lever A.

TECHNIC

The operator is seated so that his line of vision is on a line with the patient's mouth. This position may be acquired either by raising the table on blocks, or by the operator sitting on a low stool. The light is thrown into the field of operation by means of a mirror, reflecting the light on a movable bracket, or by means of an electric lamp of some form carried on the operator's head. A small tongue depressor (Fig. 2) is introduced, and the tonsil seized in a vulsellum forceps, the extremity of which is bent nearly at right angles to the shaft

(Fig. 3). One jaw is fastened in and beneath the base of the tonsil, and the other as far as possible into the supratonsillar fossa. By means of a knife the tonsil is freed from the supratonsillar roof and from the upper two-thirds of the anterior and posterior pillars. Various forms of knives have been used for this purpose. In the last three years I have used exclusively one which I have designed and found very satisfactory (Figs. 4 and 5). It is introduced with the blade upward into the supratonsillar space, and carried in this position first beneath the anterior pillar, and then downward along the posterior pillar. The tonsil is then twisted out of its bed. Frequently no more detachment is necessary. The whole tonsil up to its capsule can be dislodged. If this is not the case, however, by means of a scraping motion away from the gland the tonsil is dissected loose from its attachments, following along the line of demarcation, between the tonsil and the peritonsillar tissue. The moment the tonsil is delivered from the supratonsillar space, the snare is applied, being careful to get above and below the tonsil (Fig. 6). At this point it is essential to see that the uvula has not been included in the loop. In order to guard against this accident, it is well, before applying the snare, to secure the tip of the uvula with a long hemostatic forceps.

When the tonsil is secured within the loop, this is tightened and allowed to remain while the left tonsil is freed. This is loosened from the upper portion of its bed in the same manner, and when the snare is tightened, we proceed with the complete removal of the right, and then follow with the left, as soon as the hemorrhage from the right has stopped. This means of hemostasis is successful in diminishing hemorrhage. If the hemorrhage continues unduly, pressure for a few minutes with a piece of gauze held in a hemostatic forceps will nearly always arrest it (Fig. 7). If properly done, the entire tonsil has been enucleated. If, however, from imperfect technic there remain portions of the tonsils, especially in the supratonsillar space, they must be thoroughly removed by means of either the snare or the tonsillar punch. Blood during the course of operation is carefully removed by an assistant by means of cotton torpedoes carried in long hemostatic forceps. Intelligent sponging is of the greatest assistance; done otherwise it may more interfere with than aid the operator.

Fig. 7.—Long forceps used for sponges, which is also an effective tonsillar hemostat.

If local anesthesia is employed, the assistant should be stationed to the left, a little behind the operator, the instrument table being to the right. With a general anesthesia these positions are reversed if there is but one operating assistant, as he must manipulate the tongue depressor. If there are two operating assistants, and this is more to be desired, one should stand to the right and attend to the tongue depressor and mouth gag, while the other assistant sits behind and a little to the left of the operator and presides over the sponges and instruments—anticipating the operator's needs.

At least two assistants are necessary for the expedition and successful removal of tonsils under general anesthesia, one for the anesthetic, the other to sponge, hold instruments and attend to tongue depressor. Both require special training. The anesthetist should be able to recognize the stage of anesthesia at which the operation is best performed and to keep the patient constantly in this stage. This requires, especially in case the closed cone is used, constant vigilance, the anesthetic being reapplied whenever the operator's procedures are interrupted. Nothing is so annoying in tonsillar work as an improper anesthesia—it causes delay, adds danger and tends to render the work imperfect.

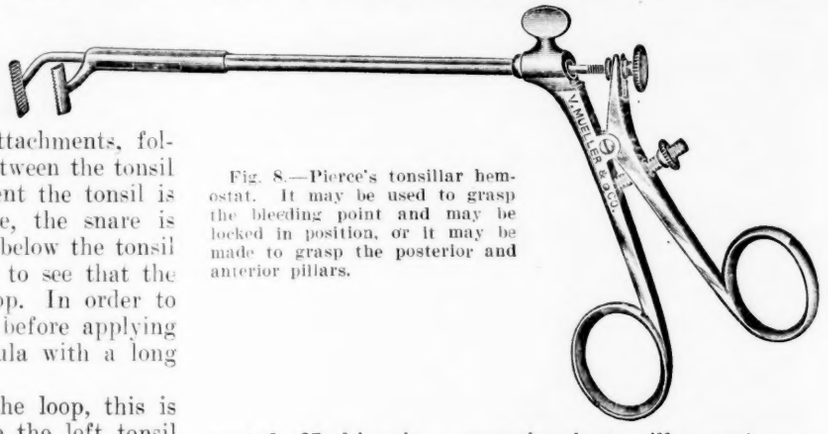

Fig. 8.—Pierce's tonsillar hemostat. It may be used to grasp the bleeding point and may be locked in position, or it may be made to grasp the posterior and anterior pillars.

Do not be too hasty in allowing the patient to be removed from the operating-room. Carefully inspect the field just before the patient's removal for hemorrhage, and for the presence of tonsillar tissue that might have been overlooked at the operation. In case pressure does not control hemorrhage, careful search should be made for bleeding points. These are usually found at the middle third of the wound, and consist of the tonsillar artery or the venous plexus situated at this point, and may be controlled by (a) torsion with hemostatic forceps; (b) putting in a figure-of-eight stitch; (c) sewing the anterior and posterior pillars together with a pledget of gauze held down on the tonsil by means of the stitches or by means of Pierce's tonsillar hemostat, held *in situ* (Fig. 8). The Mikulicz compressor is a most cruel instrument, and should scarcely be employed. The pain it causes is excruciating and, if left on for any considerable time, it is liable to form a slough which may be so extensive as to form a fistula from the pharynx to the exterior or cause dysphagia and paralysis. Hemorrhages from tonsillar operations do not come from the external or internal carotid. These vessels are safely out of the way. There may, however, be a loop of the lingual thrown up into the base of the tonsil. In this case severe hemorrhage results, but it can be controlled either by means of a hemostat or a deep ligature. Chevalier Jackson's experience with tonsillar hemorrhage must be unique, as I have not yet seen a case which demanded ligation of the external carotid.

I have employed the method described for the past six years in cases of large, globular imbedded tonsil. For pedunculated tonsils, which project into the oral cavity, I do not hesitate to recommend the old Matthieu tonsillotome. The work is done rapidly, neatly and completely if the instrument is properly used. Instead of a snare, Casselberry is very dextrous in the use of the Matthieu tonsillotome, from which the fork

and tripping mechanism has been dismounted. It is surprising how this instrument, after the tonsil has been detached from the pillars and the supratonsillar space, will follow the capsule; but in my hands it is more cumbersome than the snare, and does not so surely follow the capsule. The snare, when properly placed, really peels the tonsil from its bed. For long, thin, small tonsils, which are occasionally the seat of cholesteatomatous disease and cause fetor *ex ore,* the scissors are better adapted, after the method of Robertson, particularly when local anesthesia is employed.

After the operation, the patient should be kept in the hospital and in bed for from twenty-four to forty-eight hours. Food during this time should be liquid or semi-solid, without condiments. A gargle should be administered the day after the operation, and continued until the wound has entirely healed. For this purpose I recommend the following:

R.	gm. or c.c.		
Salicylic acid	10		ʒiiss
Spirits of nitrous ether	15		ʒss
Alcoholic solution formal. (1-10)		or	
Alcohol, āā	30		ʒi
Oil of gaultheria			
Oil of caryophyl, āā	15		ʒss
Glycerin, q. s. ad.	120		ʒiv

Sig.: Half a teaspoonful to half a glass of hot water, and gargle every two or three hours.

If pain is complained of, an ice-bag may be applied to the neck. Allowing the patient to chew bits of ice is not to be recommended, as the motion of the pharynx in swallowing and sucking is liable to perpetuate bleeding.

ADENOID OPERATIONS *

FRANCIS R. PACKARD, M.D.
PHILADELPHIA

The preliminary report of the Anesthesia Commission of the American Medical Association[1] shows the splendid results which the profession may confidently expect from its labors, and indicates likewise the vast scope of the field on which it has entered. It would seem presumptuous on my part to undertake any individual efforts in the study of the anesthesia problem at the present time, when we know that the whole subject is being so carefully and thoroughly studied. My justification for the following remarks, however, is to be found in the fact that, in operations within the nasopharynx and throat, there are certain peculiar problems which present themselves forcibly to the operator and render it imperative for him to understand them thoroughly, not only from the standpoint of the effect of the anesthetic on the safety of the patient, but also with a view of facilitating the proper performance of the operation.

As a general premise to the remarks in the following paper, I would state that, in my opinion, tonsil and adenoid operations in children and young persons below the age of 18 should practically always be done under a general anesthetic. In patients over 18 years of age, if they have sufficient self-control and their cooperation can be secured, I prefer to operate with local anesthesia by cocain.

There are certain general statements which may be regarded as true of all operations in which a general anesthetic is employed:

1. The personal equipment of the anesthetist is by far the most important factor in any operation under a general anesthetic. This would include his experience and judgment and all the other factors which go to give him a claim for ability to administer the drug. This personal equipment of the anesthetist is of so much importance that, to my mind, it almost overshadows the question of which is the safer anesthetic to use, and although, as I shall state further on, in my opinion, the dangers of chloroform are so much greater than those of ether, if the anesthetist is used to administering chloroform, and I feel that he could give it bettter than he could administer ether, I would prefer him to use the anesthetic which he was accustomed to giving.

2. The patient should be under observation or control, whenever possible, for at least twelve hours before the operation, and after it until he has completely recovered from the effects of the anesthetic. It is very hard, particularly in children, to be sure that patients will refrain from food before taking an anesthetic. Twice I have nearly lost a patient because of his having eaten shortly before the operation. In one case a child stopped breathing because a piece of bacon became impacted in the larynx. In the other case a child's tonsils and adenoids had been removed, when he was observed suddenly to turn blue. No obstruction was found in the larynx, but artificial respiration, with the administration of oxygen, was maintained for fifteen minutes before the child took a natural breath. He then vomited an enormous quantity of undigested food. These cases illustrate the two ways in which the ingestion of food before the administration of an anesthetic is a source of danger: (1) by the lodgment of a piece of vomitus in the larynx, (2) by pressure on the diaphragm from a distended stomach.

3. Operations under general anesthesia should be done, whenever possible, in a hospital or in the patient's home and not in the physician's office. The extreme risk of allowing the patient to go out just after recovering from ether or chloroform has been repeatedly demonstrated.

4. If the operation is performed in a house or elsewhere than in a hospital, oxygen and other restorative means should be provided beforehand. I now always make it a practice, when operating in private houses, to have an oxygen apparatus at hand, and I believe that at least on one occasion when a child took ether badly its life was only saved by the use of oxygen. A tracheotomy tube and the few other instruments necessary for the performance of a tracheotomy are always carried in my bag when operating at a patient's home. In a case which occurred in the practice of one of my colleagues a piece of tissue from the throat completely occluded the larynx and the operator was obliged to perform an immediate tracheotomy in order to save the child.

5. Although there is a very prevalent impression in the profession that mixed anesthesia, in which the narcosis is started with one anesthetic and maintained with another, is dangerous, this would seem to be contrary to the facts according to available statistical tables. Thus W. Estell Lee[2] analyzed the statistic of the anesthesias at the Pennsylvania Hospital for a period of five and one-half years. In that period ether was given alone or in combination 5,592 times, and there were three deaths occurring in this number. All these fatalities occurred

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. THE JOURNAL A. M. A., Nov. 7, 1908.

2. Ann. Surg., November, 1908.

among the 1,444 cases in which the ether was given alone. The same statement applied to the deaths which occurred under ethyl chlorid in the institution. Ethyl chlorid was given as a general anesthetic, alone or in combination, 5,575 times, with five fatalities. All these deaths occurred among the 947 cases in which the ethyl chlorid alone was administered. In carefully examining other large compilations of statistics, such as Gurlt's, one is impressed with the same fact.

There are several reasons which render the subject of anesthesia in tonsil and adenoid operations one of the greatest importance:

(*a*) Children who suffer from pathologic conditions of the faucial and nasopharyngeal tonsils are apt to present the condition which the French term *"lymphatisme"* and which we generally term the "status lymphaticus." The sufferers from this diathesis are notoriously bad subjects for the administration of any general anesthetic. W. Humes Roberts[3] summed up the views which are now generally accepted by pathologists in regard to that condition, namely, that there is a general enlargement of the lymphatic structures associated frequently with hyperplasia of the thymus gland and accompanied by a hypoplasia of the circulatory apparatus. Sudden death may occur in patients who suffer from this diathesis from very slight causes, such as shock, emotional or physical, frights or slight injury. Dr. Roberts reports four cases of death from the administration of chloroform for the removal of tonsils and adenoids, in Los Angeles. In the only case in which autopsy was permitted there was a marked status lymphaticus.

(*b*) The mechanical obstruction to proper respiration offered by the presence of adenoids and enlargement of the faucial tonsils is such that the inhalation of the anesthetic is interfered with so that its administration is prolonged and the amount necessary sometimes very large. This difficulty is also increased by the presence, in the throat in most of these patients, of great quantities of mucus. In several cases I have tried to overcome this difficulty by the administration of small doses of atropin some hours before the ether. The results, however, were not very satisfactory, as the dose necessary to induce dryness of the mucous membrane was found to be too large to be consistent with safety.

(*c*) Another difficulty encountered in the administration of a general anesthetic in these cases is the problem of not interfering with the operator. To obviate this I have my patients very thoroughly anesthetized before I undertake to do any work. After the operation has begun it takes so short a time to finish it that if the patient is completely under at the start, he seldom requires the further administration of the anesthetic before its conclusion. The best method of giving ether or chloroform, in my opinion, is the so-called drop method on gauze, except in patients who require any prolongation of the anesthesia, when I have the anesthetist change to the vapor method, passing the ether through warm water in a wash bottle by means of a bulb compression apparatus. The one designed by Dr. Pynchon, of Chicago, has proved satisfactory for this purpose.

The position in which the patient should be placed during the operation has been, and still is, a subject on which opinions differ largely. I always operate with the patient in the dorsal decubitus, with the head dropped somewhat over the end of the table. There is no doubt in my mind that the upright position adds greatly to the danger of ether and chloroform, and also that in the upright position the amount of blood and mucus which flows into the larynx or esophagus must be greater than when the head hangs lower than the body. Again I believe that the upright position adds to the risk of a piece of detached tissue entering the larynx and possibly causing dangerous obstruction. The danger of an aspiration pneumonia is by no means imaginary and no pains should be spared to lessen such a mischance.

As to the anesthetic for use in the operations on tonsils and adenoids, I have no hesitation in declaring my decided preference for ether. Some years ago Dr. Hinkel,[4] of Buffalo, read a valuable paper before the American Laryngological Association, in which he showed that there had been nineteen fatal cases from the administration of chloroform, one from A. C. E. mixture, and none from ether in these cases. I know personally of two unreported cases of death from chloroform and of not a single ether fatality in Philadelphia, in which the anesthetic was given for the removal of tonsils and adenoids. When it is considered that in Philadelphia ether is used in an overwhelmingly larger number of cases than chloroform, this seems a significant fact. I am aware that many will reply that in places where chloroform is more generally used there are fewer deaths, but I believe that only men who are familiar with its administration would dare use it in a city where its use is so generally deprecated. Statistics the world over show that the deaths from chloroform vastly outnumber those from ether; thus Gurlt[5] reports the following statistics:

	Cases.	Deaths.	
Chloroform	201,224	88	1: 2,286
Ether	42,141	7	1: 6,020
Chloroform and ether	10,162	1	1: 10,162
A. C. E. (Billroth's)	5,744	1	1: 5,744
Ethyl bromid	8,967	2	1: 4,483

Seitz's figures, reported by W. J. McCardie,[6] are as follows:

Pental	1 death in	200	anesthesias
Chloroform	1 death in	3,000	anesthesias
Ether	1 death in	5,000	anesthesias
Ethyl bromid	1 death in	8,000	anesthesias
Ethyl chlorid	1 death in	16,000	anesthesias

W. H. Luckett[7] gives the following statistics:

	Cases.	Deaths.
Chloroform	4,263	1
Ether	4,673	0
Chloroform to ether	141	0
Ether to chloroform	116	0
Chloroform and ether	164	0
Cocain and chloroform	6	0
Cocain and ether	10	0
Cocain	706	0
Nitrous oxid	142	0

We should remember, as I have before stated, that tonsil and adenoid patients show a distinct tendency to take any anesthetic badly, rendering it imperative that the safest possible should be chosen.

Nitrous oxid anesthesia is of such short duration that its usefulness is decidedly limited. I have had no opportunity to try it used in conjunction with oxygen so as to prolong its effect.

Ethyl bromid has resulted fatally in so many cases in proportion to the number of times it has been used

3. The Status Lymphaticus, with Particular Reference to Anesthesia in Tonsil and Adenoid Operations, Trans. Am. Laryn., Rhin. and Otol. Soc., 1908.

4. New York Med. Jour., Oct. 29, 1898.

5. Statistics for 1890 to 1894 inclusive, in the Verhandl. d. deutsch. Gesellsch. f. Chir., Berlin, xx, xxi, xxii, xxiii, xxiv.

6. Lancet, April 4, 1903

7. Medical News, New York, 1897, lxxi. 770.

DEATHS ATTRIBUTABLE TO THE USE OF A GENERAL ANESTHETIC IN THE REMOVAL OF TONSILS AND ADENOIDS

No.	Reporter.	References.	Operation.	Age.	Sex.	Anesthetic.	Remarks.
1	R. C. M. C. Smith	*Lancet*, 1892, i, 1158	Adenoids removed by Lowenberg's forceps.	11	M.	Chloroform..	Death from failure of respiration, cyanosis, no pulse, no heart sounds on auscultation.
2	Anonymous.....	*Brit. Med. Jour.*, 2, 18, 1893	Adenoids	10	F.	Chloroform..	Autopsy: Bronchi filled with blood.
3	Anonymous.....	Report of *Lancet* committee, *Lancet*, 4, 1, 1893.	Adenoids	.....	M.	Chloroform..	Death from syncope.
4	T. W. Bailey....	*Brit. M. J.*, 1893, i. 860	Adenoids	3	.....	Chloroform..	Respiration ceased before operation was begun.
5	H. Tilly.....	*Brit. M. J.*, 1893, ii, 384	Adenoids	11	M.	Chloroform..	Chloroform given for two minutes.
6	Anonymous.....	Yorkshire *Mercury*, 9, 22, 1893	Adenoids	9	F.	Chloroform..	
7	Anonymous.....	*Lancet*, 1893, ii, 817	Adenoids	9	F.	Chloroform..	Death a few minutes after beginning chloroform.
8	Anonymous.....	*Brit. M. J.*, 10, 14, 1893	Enlarged tonsils..	10	.....	Chloroform..	Chloroform given twice.
9	Anonymous.....	Marylebone *Mercury*, 12, 23, 1893.	Enlarged tonsils..	12	.....	Chloroform..	
10	T. J. Wood.... (Gowring's case.)	*Brit. M. J.*, 1894, i, 649	Adenoids; Lowenberg's forceps.	7	F.	Chloroform..	Under the influence of chloroform 1½ minutes. Tracheotomy and inflation of the lungs by catheter—no pulse perceptible.
11	Anonymous.....	*Brit. M. J.*, 3, 29, 1894	Adenoids	7	F.	Chloroform..	Autopsy: Trachea and bronchi filled with blood.
12	Halloway.....	Private information	Tonsils and adenoids.	Under 10 yrs.	.....	Chloroform..	
13	Halloway.....	*Brit. M. J.*, April, 1895	Enlarged tonsils..	4	M.	Chloroform..	Chloroform, fl. 5ii, given on a towel. Patient in upright position.
14	Edmund Owen..	*Archiv. of Pediatrics*, 3, 1895....	Removal of post-nasal growths.	7	F.	Chloroform..	
15	Anonymous.....	*Lancet*, 1, 4, 1896	Hypertrophied tonsils.	20	F.	Chloroform..	Death early in the operation.
16	Anonymous.....	*Brit. M. J.*, 7, 10, 1897	Adenoids	16	M.	Chloroform..	Autopsy: nothing to account for collapse.
17	W. J. McCardie.	*Clin. Jour.*, London, 1898, xii, 69-73.	Tonsils and adenoids.	5	F.	A. C. E. mixture and chloroform.	Began with A. C. E. mixture, partial return to consciousness, so was given chloroform before removal of adenoids. Death by "stoppage of the heart."
18	Dr. Dunn of Chicago.	Refer. to by Hinkel in *Laryngoscope*, St. Louis, 1898, v, 50.	Adenoids	Child.		Chloroform..	Personal communication by Dr. W. E. Casselberry of Dr. Dunn's case.
19	F. W. Hinkel....	*Laryngoscope*, St. Louis, 1898, v, 50.	Adenoids	8	M.	Chloroform..	Respiration and pulse ceased simultaneously.
20	J. A. Stucky.....	*Amer. Pract. and News*, Louisville. 1899, xxvii, 171-173.	Tonsils and adenoids.	15	M.	Chloroform..	Death nine hours after operation; no hemorrhage. Growths removed by tonsillotome and curette.
21	Anonymous.....	*Med. Press and Circ.*, London, 1899, N. S., lxvii, 48.	Adenoids	14	M	Chloroform..	Under influence of anesthetic 8 or 9 minutes; 5iss used in 25 minutes. Most concentrated vapor was 0.18 per cent.
22	F. A. Simmons..	*New York Med. Jour.*, 8, 27, 1894.	Tonsils and adenoids.	10	M.	Chloroform..	Circumcision was done first and then tonsils and adenoids were removed. At last sweep of the curette the heart ceased; cyanosis, death. Autopsy: Large thymus, no blood in bronchi, heart stopped in systole.
23	Anonymous.....	*Hospital*, London, 1906-7, xli, 176-178.	Tonsils and adenoids.	5	.....	Ethyl chlorid.	
24	T. D. Luke.....	*Lancet*. 1906, 1233-1236	Adenoids	14	M.	Ethyl chlorid.	Under anesthetic for ½ min. Just as he returned to consciousness he turned pale and both pulse and respiration ceased. Autopsy: Cardiac syncope.
25	L. W. Littig, case No. 11, on table. Reported by F. S. S.	*Iowa M. J.*, Des Moines, 1907-8, xiv, 457-466.	Tonsillotomy.	8	M.	Chloroform..	Tonsillotomy followed circumcision At end of operation patient was dead.
26	W. H. Roberts..	Tr. of Amer. Laryn., Rhin. and Oto. Soc., 1908, p. 512.	Removal of tonsils.	13	M.	Chloroform..	After completion of operation pulse became irregular, breathing shallow, face suddenly blanced. Artificial respiration: gasped two or three times; expired. No autopsy.
27	W. H. Roberts..	Ibid.	Adenoids	3 (child).	.....	Chloroform..	Breathing suddenly stopped and it was found that heart had ceased beating. No autopsy.
28	W. H. Roberts..	Ibid.	Adenoids	.....	.....	Chloroform..	No particulars given on request for them.
29	W. H. Roberts..	Ibid.	Tonsils and adenoids.	12	F.	Chloroform..	Apparently normal events during operation and administration of anesthetic. When operation was completed marked pallor was noticed and cessation of breathing; not noticed whether heart had ceased beating or not. No autopsy.

that I never considered it right to employ it. It undergoes decomposition very easily and rapidly, and when decomposed is a very dangerous poison.

Ethyl chlorid I have used many times, especially in conjunction with ether, at the Pennsylvania Hospital. Although it is a rapidly acting anesthetic and gives rise to practically no unpleasant after-effects, its use is attended by at least one great drawback. If administered for any length of time it induces great rigidity of the jaws, which seriously interferes with the introduction of the gag. It also seems to me that it does not lessen the sensitiveness of the mucous membrane as do ether and chloroform. The patient is apt to cough and gag even when apparently unconscious.

I have appended to this article a list of the deaths attributable to the use of general anesthetics in the removal of tonsils and adenoids. By it will be seen that out of 29 fatal cases 26 deaths were attributable to chloroform, 2 to ethyl chlorid and 1 to a combination of chloroform and A. C. E. mixture. The oldest patient was a woman of 20, the youngest a child of 3. Of the cases in which sex was stated, there were 12 males and 9 females.

I desire to express my indebtedness to Dr. E. J. Stein, of Philadelphia, for much valuable assistance in the compilation of the bibliography accompanying this article. Although Dr. Stein made a careful search of French and German literature, he was unable to find any deaths recorded as the result of the use of a general anesthetic in operations on tonsils or adenoids.

POSTOPERATIVE TONSILLAR BLEEDING

ITS SURGICAL CONTROL, WITH MENTION OF CASES *

LEE COHEN, M.D.
BALTIMORE

The operation on the faucial tonsils at this time may be said to be in a transitional stage from that of incomplete to complete removal. The importance of this subject prompted me to make known some of my ideas and experiences connected with the operation. My first intention was to discuss the entire subject in a general way, and the ideas of a number of the leaders in this Section were asked for in a circular letter addressed to them. I desire here to express my appreciation of their hearty and prompt replies. Our Executive Committee, realizing the magnitude and great importance of the tonsil operation, very wisely decided that a symposium would best serve the purpose of bringing forth a comprehensive and general discussion. I have, therefore, the honor of saying a few words about postoperative tonsillar bleeding.

Hemorrhage from the removal of the faucial tonsils varies greatly, the primary bleeding when all goes favorably amounting to less than an ounce. In some cases, however, the bleeding reaches alarming proportions. The term "alarming proportions" is difficult to define, since a loss of blood which some operators would look on with indifference might cause others great concern. Again a loss of from four to six ounces of blood in some cases might be considered alarming if the patient were frail or young, whereas in a strong, robust individual a loss of this amount of blood could work no material harm other than prolonging convalescence.

Generally speaking, female patients beyond puberty bear loss of blood better than males because of their propensity for more rapid blood-making. When confronted with a freely spurting vessel it is impossible to determine how great may be the loss of blood should it not quickly and effectually be controlled. I can recall my feeling of dismay when first brought face to face with a real bleeding of this kind, but that first case of extreme bleeding proved to be a blessing in disguise, for it forced me to adopt measures whereby I may now feel reasonably secure from any very serious effects of tonsillar bleeding.

I am told by such men as Welty, Stucky, Richards, Robertson, Todd[1] and others that the loss of blood following a complete removal of the tonsil in its capsule is less than after the old method of tonsillotomy with the guillotine. On the other hand, Jackson, Thomas, Vaughan and others,[1] while advocating such complete removal, claim that the loss of blood is greater therefrom.

A fact worthy of note is that, of the 54 cases of alarming bleeding tabulated by Smith[2] and Wright,[3] the tonsillotome in some one of its many forms was employed in 34; and it was also used to remove the tonsils in at least 3 of the 6 fatal cases found by them in the literature from 1868 to 1904, the method of removal in the other 3 fatal cases not having been mentioned. In the 4 more recent fatal cases, reports of which I have been able to collect, the tonsillotome only was employed.

My experience has been that there is a greater tendency to bleed in tonsillectomy than in tonsillotomy, because, in the former, vessels are cut before they subdivide into the terminal filaments and nearer to the source of the large arteries from which they are given off. But I have adopted the complete removal because of the better results thereby obtained, and in performing this operation I have learned how bleeding can be controlled, so that I now feel that the loss of blood from my complete operation is generally much less than it formerly was in performing tonsillotomy.

Two of my cases which I wish to report will illustrate clearly the difference between the old and nonsurgical method of controlling hemorrhage and the more recent and effectual one.

CASE 1.—*Operation.*—A. K., a healthy woman, aged 23, was operated on by me in my office on Jan. 28, 1908, at 4 p. m., under local anesthesia. Both tonsils, which were perhaps the largest I have ever seen, were removed *en masse* with the knife and vulsellum. Bleeding from both sides at the time of the operation was quite profuse, the bleeding on the left side being effectually stilled by pressure with cotton soaked in Monsell's solution. On the right side I was obliged to use Boetcher's hemostat.

Postoperative Hemorrhages.—The patient was removed from my office to the Hebrew Hospital in the evening with the clamp still in position. The hemostat was removed at 10 p. m., the cotton pledget being left in position for nearly three days. No bleeding on removal of cotton. The following, or fourth day, patient left hospital. Nine days after the operation, at midnight, there was a slight bleeding from the right side, this being easily controlled by the use of ice internally and externally. There was no further loss of blood until the following afternoon at 3:30, when it was again necessary to make use of the pressure hemostat. The patient was then sent back to the hospital, and on attempting to remove the clamp at 11 p. m., hemorrhage recurred, making it necessary to replace it. The following morning, February 8, at 2 a. m., a slight bleeding was again noticed, but it was controlled easily by pressure and the use of ice. At 4 o'clock the same day there was again a slight loss of blood, at which time a heavy silk suture was passed deeply through the upper portion of the tonsillar pillars, over the point from which the bleeding seemed to come. For the following twenty-four hours there was no bleeding, and the patient's condition was very satisfactory. Late the next afternoon, February 9, twelve days after the operation, very active hemorrhage commenced, in spite of the suture. Mere pressure had no effect, so the hemostat was again placed in position, bleeding being controlled after a few minutes. At 7 p. m., the clamp slipped, and before it could be replaced a pus basinful of blood was lost.

Control of Hemorrhage.—The patient now being quite weak, we realized that some very radical measures must be adopted at once to avert a fatal issue. She was therefore placed on the operating table at 7:30 p. m., firm pressure being made over the common carotid artery to prevent further bleeding. A roll of iodoform gauze about the size of the tonsil removed, saturated with 1 to 1,000 adrenalin chlorid solution was placed in the tonsillar fossa, and firmly held with a large Kelly clamp by an assistant. A continuous suture was then placed in the pillars of the fauces from the soft palate down to the base of the tongue, a curved Hagedorn needle, placed at a right angle in a plain needle-holder, being used for this purpose. No anesthetic was used for this operation, on account of the weak state of the patient. The time consumed in the work was about half an hour. The pulse was small—about 160 to the minute, and the general condition of the patient was very bad. Two salt infusions of about a pint each were given, one at once and another during the night. There was not a drop of blood lost from this time on. The suture was removed four days later and the gauze pledget allowed to remain one day longer. The tonsillar fossa on re-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Personal communications in reply to questions.
2. Smith, Harmon: Alarming Hemorrhage Following Tonsillotomy . . . . Laryngoscope, 1904, p. 121.
3. Wright, Jonathan: Hemorrhage After Amygdalotomy . . . . New York Med. Jour., 1890, lii, 234.

moval of the gauze looked very clean, and the patient steadily improved, leaving the hospital in excellent condition on February 21, fifteen days after her last admission.

The lessons learned from this case have been most valuable: First, I believe the secondary bleeding was directly caused by the sloughing process following the primary use of Monsell's solution in the tonsillar fossa. I would never again sanction the use of this agent in controlling hemorrhage from the tonsillar region. Second, by permitting repeated recurrences of the bleeding over so long a period of time the patient's life was almost lost. In a similar case I would adopt radical measures at once. Third, had the primary bleeding in this case been managed in the same surgical manner that we employ to-day, we should have been spared all our trouble and anxiety and the patient the danger and discomfort to which she was subjected.

A very interesting case, and one which was managed in a manner somewhat like my own but which ended fatally, has been reported by Damianos and Hermann[4] of Vienna. There are many points in this case worthy of note, and I therefore take the liberty of giving it in detail:

CASE 2.—The patient, a strong, robust man, aged 23, was operated on in one of the dispensaries, with Fahnstock's tonsillotome, on the afternoon of Oct. 9, 1901. An hour and a half later he was brought into the Vienna surgical clinic bleeding profusely from what appeared to be an artery of large caliber. Digital pressure, within and without, over a period of an hour and a quarter, controlled the hemorrhage for about an hour. When it recurred a Mikulicz-Störk compression clamp was applied until the following morning. No further bleeding occurred for three days. On October 13 it was again necessary to apply the clamp to stop bleeding. Removal of the clamp twenty-four hours later, the 14th, was followed by more bleeding, necessitating its further immediate use. No further hemorrhage occurred until the 16th—two days later—when it was once again necessary to make use of the compression clamp. Its removal twenty-four hours later was not followed by bleeding, but there were signs of sloughing at the points where the pressure had been too continuously made by the clamp. A fistula leading from the throat within, through the skin, permitting fluids to escape on swallowing, made its appearance on the 18th, a day later. On the night of the 22d, following an intense paroxysm of coughing, a profuse hemorrhage occurred, the patient losing almost a liter of blood within a few minutes. This was controlled by prolonged digital pressure, but the patient sustained another, though smaller, loss of blood during the night. The following morning, the 23d, the common carotid artery was ligated, but the patient died at 4:30 o'clock in the afternoon, sixteen days after the operation, not having been able to withstand the great loss of blood. Autopsy showed that a small artery arching off from the external maxillary, and running directly into the base of the tonsil, had been severed. A sound could be passed through this vessel from the external maxillary artery to the point in the tonsillar base where it had been cut.

It is clear in my mind that had this bleeding vessel been caught with the artery forceps and ligated with catgut or silk before the loss of blood was so great, the patient's life could have been saved.

To illustrate how such serious bleedings can be averted when the proper measures are used to control primary bleeding, I shall now report a more recent case occurring in one of my patients at the Hebrew Hospital:

CASE 3.—*Operation.*—M. H., a man aged 36, height 5 feet, waist measure 45 inches and weight 185 pounds (all conditions promising for much bleeding), was operated on by me under local anesthesia, Dec. 31, 1908, at 4 p. m. There was no difficulty in the removal of both tonsils *en masse* in their capsules, with the knife and vulsellum, without injury to the pillars of the fauces or exposure of muscle tissue. There was practically no primary bleeding, and the patient was required to keep in an upright position for several hours.

Postoperative Hemorrhage.—There was but the occasional expectoration of blood-stained saliva until about 9 o'clock in the evening, when the patient began to bleed profusely. He was then taken to the operating room and placed on the table. Bleeding from both tonsillar fossæ was found, more profusely from the right, however. A large spurting artery situated deep in the fossa of the right side, near the base of the anterior pillar, was pumping a steady stream across the opposite side of the throat. The bleeding was so profuse that pressure with several sponges seemed to have but little effect.

Control of Hemorrhage.—This vessel was then caught with the Jackson hemostat as quickly as possible and tied with catgut. There was another bleeding vessel of considerable size situated in the supratonsillar fossa of the same side, and this was also clamped and ligated. The patient lost perhaps in all about eight ounces of blood. Though this controlled the major part of the bleeding, there was still a tendency to ooze. The cause for this was soon found and one more artery of small size, situated deeply about the middle of the right posterior pillar, was caught and tied, also two small veins on the left side, one high up in the supratonsillar fossa, and the other in the bottom of the fossa just above the tongue. There was no further loss of blood, and the patient made an uninterrupted recovery, leaving the hospital on the third day after the operation.

From the profuse bleeding in this case we may say with certainty that had the same measures been employed to control it here as in Case 1 the outcome would have been as serious as in the former case, if not more so.

Many reasons have been offered as to why bleeding is great in some cases and slight in others. There can be no doubt that hemorrhage is more likely to occur in older subjects, but I have been forced to ligate vessels in a number of very young children. Severe hemorrhage has also been said to occur oftener in men than women. In my own experience, however, I can find no basis for this belief.

Hemophilia has been thought in many instances to be the cause of alarming hemorrhage. While no one will dispute the seriousness of an attempt to remove the tonsils in cases in which a real hemorrhagic diathesis exists, there are but few authentic cases of postoperative tonsillar hemorrhage where real proof of hemophilia can be produced. In the 150 cases collected from the literature by Damianos and Hermann,[4] only five, from the history, were thought to be hemophiles. In but two of the eight fatalities, reports of which were collected by the same authors, could this form of dyscrasia be suspected.

Among the fifty-four cases tabulated by Smith[2] and Wright,[3] three patients, all of whom recovered, were said by the operators to be hemophiles. I doubt whether even three patients would have recovered had they been real hemophiles. An undoubted hemophile was the patient whose case was reported by Dr. R. H. Johnston[5]—a boy, aged 17, who died fourteen days after three tonsillar crypts had been cauterized with the galvanocautery, from an almost continuous bleeding starting on the ninth day.

Dr. Chevalier Jackson[6] reports a case in which he saved the life of a patient after tonsil operation, per-

4. Damianos and Hermann: Tödliche Nachblutung nach Tonsillotomie . . . . , Wien. klin. Wchnschr., 1902, p. 225.

5. Rev. hebd. de laryngol., 1906, xxvii, 545.

6. Jackson, Chevalier: Ligation of External Carotid Artery . . . . , New York Med. Jour., 1907, p. 308.

formed by another physician, by ligation of the external carotid artery. Subsequent developments showed undoubted hemorrhagic diathesis, the patient bleeding to death from epistaxis at a later period.

I believe that in many of the so-called hemophiles the bleeding is due to a blood vessel having been opened by cutting and not securely tied. In the Vienna case a family history of bleeding had been elicited from the patient, and, had the autopsy not proved the vessel to have been cut, this could undoubtedly have been reported as a case of hemophilia.

Cutting of either pillar of the fauces has been mentioned as a frequent cause of hemorrhage; many believe this to be the most common cause. This is probably true in those cases in which operation is done with the guillotine. In the new methods by dissection, hemorrhage is always greater when muscular fibers are exposed.

In order to have a clear understanding of the method which I employ, it will be better to follow the plan of the operation as we perform it at the Hebrew Hospital. As to the method itself nothing original is claimed. We simply apply the principle used to control bleeding in all general surgical operations—namely, to catch and tie every vessel showing a tendency to bleed profusely.

The operation performed is essentially that described by Dr. T. Chew Worthington,[7] with some slight modification in the technic. The tonsil is removed by dissection *en masse* in its capsule, with a modified Seiler septum knife, a two-pronged vulsellum being used to pull the gland out of its bed. Patients above 14, and occasionally under that age, are operated on when sitting under local anesthesia. A 0.25 per cent. solution of cocain in 1 to 6,000 adrenalin chlorid solution is injected into the region after the application of a 10 per cent. solution of cocain to the surface. Very little discomfort is complained of by the patient when thus anesthetized. Operations on children, and at times adults who insist on it, are done under ether anesthesia, the patient lying on the back, with the head of the table considerably lowered, so that the blood can not easily enter the larynx; 1 to 6,000 adrenalin solution is also injected before operating. The right tonsil is first removed, the tongue being depressed by an assistant. One or more large gauze sponges held in eight-inch Kelly static forceps and ligated with ordinary No. 2 catgut or clamps are then placed in the fossa and held there gently but firmly. The anesthetist is now directed to anesthetize the patient again fully. This being accomplished, a careful inspection of the fossa is made by holding back the anterior pillar with a pillar hook. Any spurting vessel is caught at once with Jackson's hemoblack silk. While we prefer catgut in most cases because we never hear from it again, it is sometimes easier to use silk. On several occasions, however, in which silk was used in the supratonsillar fossa it became encysted and gave rise to such irritation that we were obliged to pick it out. This does not occur when it is used lower down because it sloughs off during the process of healing.

At times, in spite of much blood pouring down the center of the fossa from above, there is no spurting vessel visible until the supratonsillar fossa is everted by means of a couple of pairs of long dressing forceps. In turning out the fossa we must not be misguided by the cessation of hemorrhage, for often the pressure made during this process is sufficient to close the mouth of the vessel. By lessening somewhat the pressure of the dressing forceps we have often been enabled to find the mouth of the spurting artery. It is from an artery high up in this situation, generally a branch of the descending palatine, that we have most trouble, and there is no doubt in my mind that this artery was responsible for the serious bleeding in Case 1. Ligation of the tonsillar artery has also been found necessary a number of times. Ballenger[8] has found bleeding from this vessel to be more frequent than from any other, whereas Jackson[9] sees the bleeding oftener from the upper vessel, as we likewise maintain. Occasionally it is also necessary to tie a vein or two of the tonsillar plexus.

All bleeding vessels having been controlled, a gauze sponge dusted with Squibb's surgical powder is packed into the fossa to control any oozing, and thus we have our field of operation absolutely free from blood for the removal of the left tonsil.

The second tonsil is removed in the same manner, and after all bleeding is controlled we remove the adenoid vegetations if their removal is called for. Here, too, we control the bleeding with a gauze sponge held firmly in the postnasal space by means of a Kelly clamp. Often no more than one-half to an ounce of blood is lost from the triple operation, and but a small proportion of this comes from the tonsils. Generally speaking, there is more primary bleeding when ether is given than when only local anesthesia is employed.

Many assert that the ligation of bleeding vessels is impossible in the small space afforded us in this region. I do not wish to imply that it is always easy to ligate vessels deep in the fossa; on the contrary, in a small mouth, when the vessel happens to be one the posterior pillar or deep down near the base of the tongue, where the bite of the forceps must necessarily be short, we frequently have to resort to a gauze packer to slip our loop over the end of the clamp. But in most instances we tie the vessels with comparative ease.

It may be argued that the ligature is not always necessary; that torsion will often suffice. Granted that this is true in a number of cases, I believe that by the use of the ligature we not only reduce primary hemorrhage to a minimum, but that we are also secured absolutely from recurrent or secondary bleeding; I have experienced such occurrences only when the vessel was not tied. In one case I was obliged to use ether anesthesia in an adult, several hours after the tonsils had been removed under cocain, in order to catch and tie the spurting artery. This could doubtless have been accomplished with little difficulty during the operation before the effects of the cocain had worn off.

An absolute necessity in catching and ligating the vessels is to have able assistants, as one assistant should evert the pillars while the other sponges and depresses the tongue, leaving both hands of the operator free to catch and tie vessels. This is one of my main reasons for no longer removing tonsils outside of the hospital.

An important point, in my opinion, is that the patient should not be removed from the operating table to his bed until all signs of bleeding have disappeared and the throat is perfectly dry. By so doing we avoid the

7. A Simple Method of Excision of the Faucial Tonsils, THE JOURNAL A. M. A., May 25, 1907, xlviii, 1761.

8. Clinical Anatomy of the Tonsil, Tr. Am. Laryng. Assn., 1906, xxviii, 121.

9. Tonsillar Hemorrhage and its Surgical Treatment, Ann. Surg., December, 1907, xlvi, 821.

swallowing of blood by the patient in a semiconscious state, as so frequently happens after the return to bed. Casselberry[10] reports the death of a boy, 3 years of age, after the removal of one tonsil, where the primary bleeding was apparently insignificant and was thought to have ceased; yet a few hours later the child was found in a hopeless condition, the blood having been swallowed. (This patient was not operated on by Dr. Casselberry, but by some other physician whose name was not mentioned.)

It is quite generally recognized that in the presence of hemorrhagic diathesis the clotting capacity of the blood is increased by the calcium salts. In the removal of the posterior turbinal ends, in a number of cases, I have operated on the one side with, and the other side without, the preliminary administration of calcium, and in nearly every case there seemed to be much less bleeding when these salts were given.

Just how great may be the effect of these preparations on tonsillar bleeding it is, of course, difficult to say with certainty, but as it is impossible to tell in what cases hemophilia may exist, it has been my custom for a couple of years past to administer calcium, usually in the form of the lactate, for forty-eight hours prior to every tonsillectomy. One thing is certain: it can do no harm.

Regarding the injection of adrenalin preparation, there is a diversity of opinion. Some operators believe that its use predisposes to secondary bleeding. I recall no instance when the bleeding could be ascribed to the use of this agent, and it seems to me that the advantage offered during the operation, of a less bloody field with our landmarks unobscured, more than compensates for any slight tendency to secondary bleeding thought to follow its use.

This method of controlling bleeding has been used by me for the past ten months in both private and dispensary patients, with the utmost satisfaction. During this time styptics have been given up entirely and the pressure hemostat, formerly often applied, to the great discomfort of the patient, has fallen entirely into disuse.

In conclusion I would say that many obstacles arising at times in the management of some of my cases have been easily overcome through the efficient aid of Dr. Charles Bagley, Jr., and his assistants at the Hebrew Hospital.

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10. Chicago Med. Recorder, 1893, iv, 1.

ABSTRACT OF DISCUSSION

ON TONSIL SYMPOSIUM (PAPERS BY DRS. ROBERTSON, MAYER, PIERCE, PACKARD, AND COHEN)

DR. FRANK C. TODD, Minneapolis: It is evident that the profession is appreciating the fact that the incomplete operation performed with the tonsillotome has now no place in modern surgery. The removal of the entire tonsil in its capsule leaving intact its bed of muscular tissue and the faucial pillars uninjured gives the best ultimate results. But if the muscle tissue is torn or otherwise materially injured or the pillars are greatly damaged, or portions of the tonsil remain to form adhesive bands between the pillars and to continue the disease process, then the results are not the best that can be secured and may even bring about such cicatricial contraction as to interfere with the normal action of the muscles thereby causing discomfort and disturbance. Yet it is evident that considerable traumatism to these structures may take place and the results be good, even though not ideal. As throat surgeons, however, it is our duty to try to bring about ideal results and so to perfect our technic as to accomplish this end.

While the methods now in vogue differ materially, I can not help but observe that we are coming closer together and experience is bringing us to a method which will be, I believe, more or less universally adopted. A considerable experience has taught me the wisdom of avoiding the use of sharp instruments and particularly scissors and the method which I am using is similar to that described by Dr. Pierce. Dr. Cohen calls attention to the fact that it is not only desirable to stop bleeding on account of the danger to life, but for the sake of losing as little blood as possible, even though that danger does not exist. Dr Cohen quotes some as having claimed that the complete removal of the tonsil in its capsule results in less hemorrhage than following tonsillotomy with the guillotine, while he states that some others claim that the loss of blood is greater. This is undoubtedly due to the difference in the technic of various operators and I believe those who have performed the operation a great deal have worked out a more bloodless method. It will be interesting to secure the testimony of operators some years later when we have determined what may be considered the best method of performing this operation.

In regard to the use of calcium salts to prevent bleeding, I herewith quote an article recently published in THE JOURNAL of the American Medical Association, entitled "Pharmacologic Fetishisms" by Wilfred N. Barton, M.D., Washington, D. C. "The salts of calcium are supposed by many physicians—perhaps a majority—to increase the coagulability of the blood. As a matter of fact, they have no influence on coagulation time (Robertson, Illman, Duncan). Nor is it quite clear from a pharmacologic standpoint why they should ever have been expected to do so. Almost all of the calcium taken internally is passed through the bowel unchanged, owing to its extreme insolubility and impermeability. Then, too, it should be remembered that there is almost never any deficiency of calcium in the adult tissues. Treating with calcium internal hemorrhages in which the coagulability of blood is not reduced seems the height of folly. The calcium ion is useless in therapeutics."

Recently it has been called to my attention that the formation of a fibrous clot could be stimulated effectively by applying gelatine and I am now using it for that purpose in the nose as well as the throat. It seems to be effective but I do not feel that my experience is as yet of sufficient value to present the results at this time. One point which I wish especially to emphasize, however, is that of the position of the patient during general anesthesia. To do this operation properly and quickly a good view of the field of operation is required. The positions usually utilized, with which you are familiar, do not afford so good a view as the one which I here advocate, nor have they several advantages which will become evident to you on using this position. This I have learned not alone from my own experience, but from those who have witnessed the operation done in this position. The advantage of the position is not only the good view obtained, which can also be enjoyed by other observers, but there is absolutely no danger of the blood entering the larynx and the blood does not as easily obscure the field of operation. All assistants are out of the way and the first assistant can effectively sponge the blood and hold the tongue depressor.

DR. CHEVALIER JACKSON, Pittsburg: I think we shall all file away this morning's symposium and the discussion which has followed and study it over carefully. I question very much if there will ever be any one way of doing tonsil operations that will be followed by every one, but if we can break down that Chinese wall we have all put around ourselves with regard to the tonsil operation we can learn much. I thought I knew how to do the operation but two years ago I went to Fall River and saw Dr. Richards doing the work and I went home a wiser man. I found that I had not been getting the tonsils out completely. I was surprised when I found how easily one could determine by feeling in the fossa whether he had cleaned it out. When my former patients return now I take out the rest of the tonsils. One patient came back and I looked in the throat and said, "Why, this is one of the most

beautiful results from the tonsil operations I have ever had." She said "Yes, after Dr. Dickinson fixed it up; he operated two months ago." I began to find out then how Dickinson did it and found that he had a good many good points in technic. We can all learn if we are willing. Every one who has seen Dr. Pierce operate knows the skilful manner in which he handles instruments. The snare he has shown is one of the best I have seen. I can heartily endorse Dr. Cohen's paper. There is no reason why we should use ice for the arrest of tonsillar hemorrhage when we know that we can control it in a surgical manner. I think ligation is at times necessary, though for the smaller vessels torsion is sufficient. It is difficult of course; every thing worth doing is difficult.

In regard to Dr. Pierce's remark as to the uniqueness of my experience in ligation of the carotid, I have been also called to task by St. Clair Thompson in the same way. My position was unique for the reason that as consultant I saw these cases after everything else had been tried and the patient was moribund. I ligated the external carotid in a case in which previously caustics had been used and when the slough began to separate there was oozing again and had the carotid not been tied the patient would have bled to death. Changes in the blood in typhoid fever, diphtheria, erysipelas and other diseases may bring about a temporary condition similar to hemophilia.

As to instruments, we all have our own, of course, and we work with them until to us they are the best.

DR. F. GURNEY STUBBS, Chicago: I think the conclusions we will all draw from this symposium on the tonsils is that laryngology is advancing. One of the chief criticisms that has been levelled at the laryngologist is that he is somewhat provincial: that he is inclined to shut himself up in his own field ignoring the general principles of medicine and surgery. This has led the laryngologist into many errors and it is a sad commentary that at this late day, before a section on laryngology we should have to have called to our attention such a simple surgical procedure as picking up an artery with the clamp if it is bleeding. Probably the reason the tonsil operation has been brought into such bad repute is that every Tom, Dick and Harry in the medical profession has felt that the tonsillotome is all that is necessary for this operation. The papers which have been read to-day thoroughly cover the ground. It remains for each of us to work out his own technic.

We can not get away from the paper on anatomy; that is fixed. Of course, we may have an anomaly in which an artery is not where we expect it to be, but that is extremely rare. In considering the anatomy we must bear in mind that the source of disease, which is one of the indications for operation, is in the crypts and those of us who have for a number of years been shelling out the tonsil in its capsule, with the side toward the muscular tissue smooth and shiny, have been able to put a blunt probe down in the crypts and find that the bottom of these crypts is nothing more or less than this thin capsule. That is why when a tonsillotome is used and half the gland cut off the crypts go on with the disease just the same as before the operation. All that has been accomplished is to make more room in the throat. That important factor was not lost sight of in the indictions for enucleating tonsils.

As to the pathology of the tonsil, and its function, the hypothesis of Dr. Robertson appeals to me as most rational, especially as to the function of the tonsil being past at the sixth or eighth year, and if not previously inflamed tends to atrophy, the same as the adenoid.

As Dr. Jackson has just said, each one of us will probably work out a technic which varies a little from the other man's and it all depends on how familiar we become with that technic and how dextrous. Personally in the last five years I have been removing the tonsil *en masse* in its capsule. We have a body to enucleate which is held in position by no ligments; it simply rests between the faucial pillars held there by a reflexion of the mucous menbrane of the throat over it. Consequently by taking a knife, it doesn't matter what kind, we can easily cut through the mucous membrane and with forceps draw the tonsil well toward the median line in the throat and as soon as we have done that we see that it is attached only by loose connective tissue. Then with blunt dissection you go around it until you get over the line of greatest circumference. From then on it is a question of how to proceed. Some keep on using the knife claiming that when you are so far there is no use discarding the knife for another instrument. Personally I use a snare at this stage and with one contraction of the hand it shells the gland out very quickly. But, of course, that is a matter of preference. The whole operation of removing a tonsil should not take more than two or three minutes.

The question of bleeding then confronts us. In the last five or six years I have never encountered a spurting artery which necessitated a ligature. I think, however, that we should confront the matter as a surgeon would in other conditions. When the tonsil is enucleated in the manner I have described it is easy for you to see the blood vessels of any size that are cut and they are in loose connective tissue which allows them to contract readily. For a second after the removal of the tonsil there may be a rush of blood but as a rule the snare (and that is why I prefer it) crushes the ends of these vessels. As soon as the tonsil is out I take a piece of gauze in artery forceps and hold it in the fossa for a minute and then remove it. If there should be a spurting vessel, catch it up and treat it surgically.

DR. W. E. CASSELBERRY, Chicago: To secure data bearing on the superiority of results in tonsillectomy, the degree of safety of ether anesthesia for this operation in children and the readiest means of controlling hemorrhage, I have collected my records of 610 cases of patients operated on in private practice which for comparison of results may be divided as follows: (1) Tonsillotomy by the older methods embracing about 40 per cent. with ultimate recurrence of symptoms in one out of five cases; (2) tonsillectomy, not quite complete, in 20 per cent. with few actual recurrences but with many minor complaints from retention of secretions in the few follicles which escaped removal; (3) modern total tonsillectomy, in 40 per cent., with practical freedom from recurrence, in all cases.

Total tonsillectomy is an ordeal through which few adults are able to sit quietly for both tonsils at one time, and as the after-soreness is considerable, an interval of a week between the two is my customary recommendation excepting, of course, when a general anesthetic is given which is always necessary in young children and sometimes in adults to insure the quietude which this operation demands. When done in two sittings, it is reckoned statistically as one operation; 245 cases, nearly all of double tonsillectomy and adenectomy, most of the patients children under 14 years of age have been satisfactorily operated on under complete ether anesthesia without any fatality or other accident excepting threatened respiratory syncope twice which yielded promptly to artificial respiration, and without any subsequent pneumonia or nephritis or any permanent detriment. Midway during the preliminary etherization the throat is sprayed sparingly with a 2 per cent. cocain solution with adrenalin 1 to 2,000, an expedient which accounts for a more satisfactory quietude of the throat with avoidance of delays than is commonly credited to ether. Safety is likewise promoted by a special position of the patient which, while guarding against aspiration of blood, expedites the operating by diminishing the delays caused by bleeding. The right abdominal position which I now use throughout for the heavier patients and in part for all patients, differs from the usual lateral position in that the patient lies, not strictly on the side, but on the abdomen and antero-lateral surface of the chest and shoulder, the right arm being drawn from below backward across the table, which prevents him from rolling off. The face is first directed upward for convenience in removing the right tonsil but at the first free flow of blood the face is rotated downward, which I call the bleeding position, in which as bleeding lessens without waiting for it to stop, one can proceed unembarrassed by the blood flow, to enucleate the left tonsil, provided the operator kneels to direct a good headlight from below upward into the throat. However for smaller children who can be turned quickly and neatly I still prefer the dorsal position with head and shoulders raised, for the first tonsil, turning at the critical moment to the bleeding position for the second tonsil and returning again to the dorsal position for the adenoid.

Hemorrhages requiring supplementary means of control, in children, have been less than one per cent., whereas in adults all methods represented, none proving exempt, they have been 8 per cent., or if stated in terms of single adult tonsils 10 to 25, the ratio figuring the same since the use of adrenalin as before it, and the same for tonsillectomy as for tonsillotomy; but the cleanness of the socket after total enucleation renders it easier to find a bleeding vessel. These hemorrhages were all arterial and continued from 1 to 10 hours, showing no tendency to stop till controlled by the following means: In 8 cases by galvanocauterization; in 1 case by actual cauterization; in 1 case by solid silver nitrate cauterization; in 3 cases by hemostatic forceps; in 3 cases by Mikulicz' compressor; in 1 case by digital compression.

DR. C. F. WELTY, San Francisco: All tonsillar hemorrhage comes from remaining tonsil tissue. To describe just how this comes about, and why it is so I will have to describe the technic of the way I operate. I have stopped doing cocain operations entirely. The patient is sent to the hospital the night before, the bowels emptied and no breakfast allowed in the morning. A half hour before operation a ¼ grain morphin with a 1/150 atropin is given hypodermically; children in proportion, governed by the weight of the patient, and no morphin given to children under four years of age. The patient is placed on the back; primary anesthesia of nitrous oxid is given until they are completely under, and then ether until the patient ceases to struggle or the irritation is overcome; then the mouth gag is applied and the head drawn toward the right, the operator sitting on a chair. I have been using Dr. Rupert's cannula in the mouth. At this stage the throat is apt to be filled by mucus which is cleared away and a 1 to 1,000 solution of adrenalin is injected into the mucous membrane around the tonsil, about ½ dram. Then with any kind of a knife the mucous membrane is severed just where it attaches to the tonsil; and this is a very important step. My assistant holds the tongue and that is all; I take care of the hemorrhage myself. I use one anatomic forceps and one nasal forceps with an acute angle. I can change my hold of the tonsil with this very easily without causing hemorrhage. This incision through the mucous membrane is all the cutting that is done. Then I introduce the anatomic forceps and sweep it around and generally find that with a single sweep the tonsil is out in the throat. Sometimes it takes longer and sometimes the adhesions must be cut. Then the snare is put on and the operation finished. There may be a rush of blood, when a sponge is put in and held there for a minute or so, being changed as soon as it is saturated with blood, and being held with considerable pressure. If the bleeding does not stop in a short time I look for the bleeding vessel and grasp it with the forceps, allowing them to remain on for a few seconds and then taking them off. If it continues to bleed I suture the pillars at once. I never allow a patient to leave the table while bleeding. I have 250 such cases to report, with one severe bleeding, and in that case the tonsil was not sufficiently removed.

DR. GEORGE L. RICHARDS, Fall River, Mass.: There are two types of these tonsils—the large ones which stand out in the throat, and the smaller submerged ones in which the capsule has considerable fibrous tissue running down into the tonsil. In order to get any tonsil out completely you must do the operation extracapsularly. Dr. Jackson has kindly referred to me in connection with the finger nail operation; I did not originate it. There is a point where the line of cleavage between the capsule and fossa allows the finger nail to go through. It has one advantage over the blunt instrument and that is that you have the sense of touch, and you can get up into the supratonsillar fossa and get the velar lobe and bring it down into the throat. As soon as the tonsil is out in the throat I apply the forceps and then detach with the tonsillotome or snare. You can operate with any type of instrument with which you are familiar, but the main thing is to do the operation extracapsularly.

The question of tonsillotomy or tonsillectomy is not yet settled. One-third of the operators are still doing tonsillotomy, thinking the complete unnecessary. They have not studied the literature of rheumatism and kindred infections which have their portal of entry in the tonsils or they would change their minds. I agree with Dr. Welty as to hemorrhage occurring because of incomplete operation, though this is by no means always the case. Robertson showed us at the New Orleans session how to get the entire tonsil out and showed then that hemorrhage was sometimes due to incomplete operation. But the majority of cases reported in the literature do not seem to have been due to that cause. The six cases reported by Heuking came from injury to the pillars. It may be that this is sometimes the case, and it is as apt to be due to the tonsillotomy as to the tonsillectomy operation. It is easy to cut one of the pillars longitudinally and that is the worst bleeding to stop. One advantage of the finger method is that bleeding from this point is less apt to occur.

DR. J. F. BARNHILL, Indianapolis: I wish to subscribe to most that has been said concerning thorough work in tonsil dissection, but I do not believe the time has yet arrived when we should say that all tonsils should be removed by tonsillectomy. It has been said over and over again that we do not know what the function of the tonsil is, and until we do know that it has no function we should not in every case remove it *in toto*. In the kind of tonsil that Dr. Mayer has spoken of as the projecting tonsil it is not always necessary to remove it by dissection. I wish to defend local anesthesia for tonsil dissection. In the great majority of cases it is not necessary to subject the adult patient to general anesthesia for the purpose of total enucleation of the tonsils. With our modern means, and with modern remedies at hand, we may with local anesthesia now state to the patient that we can dissect out his tonsils without the least pain. The tonsils may immediately be dissected loose and removed together with their capsules. I do not have any one hold the tongue except the patient himself. There is a good psychic influence in this aside from the benefit you have of having every one out of the way. They may say they can not hold his tongue down, but you tell them that all others have done so and they will succeed nearly always better than any assistant could.

In regard to hemorrhage, of course everyone should be prepared to meet the emergency. I do not believe that it is always necessary to tie these vessels. Many of the vessels that spurt only slightly will check quickly and we do not hear from them again; nevertheless, I agree with Dr. Cohen that we should be surgeons and therefore prepared to do the work surgically when it is necessary.

DR. MARK D. STEVENSON, Akron, Ohio: The surgery of the tonsillar fossa, outside of the removal of mechanical obstruction, is primarily for the removal of retention spaces. There is little benefit obtained, either locally or to the general economy, if spaces remain after tonsillectomy due to pouch formation from scar contraction, or too free granulation or folds in the pillars, the harm depending on the amount of retention. To prevent pouch formation it is usually best to sacrifice the plica triangularis and sometimes a part of a very large overhanging anterior pillar. I also use a high table but I sit on a low stool. The patient lies on his side with his upper shoulder resting against a sidepiece which is placed on the table, and which comes to within a short distance of the head of the table. The patient's head is lower than the neck, and his face points downward and toward the operator so that blood or vomited matter readily runs out of the mouth. I think that in Dr. Todd's position a port of the already too small breathing space would be filled with blood. After complete enucleation of the tonsil, I find it very difficult and sometimes impossible to seize bleeding vessels with an ordinary hemostatic forceps, so I have had a forceps made pivoted with small sharp teeth on the end which readily seize the vessels in the moving pharyngeal muscles. It is slightly larger a short distance from the end than at the end, making it easier to slip the ligature down to the tissues in ligating a vessel. I do not find it difficult to ligate vessels during the operation but very difficult afterward when the patient is nervous and weak. One-half hour before operating a small dose of bromids is given to quiet patients when a local anesthetic is to be used. After removing a tonsil under general anesthesia steady pressure of gauze in the fossa usually quickly stops all bleeding. I prefer to use a knife alone or a knife and snare under general anesthesia, but under local anesthesia when it is important not to pull the tonsil which causes pain, especially that complained of in the Eustachian region, I much

prefer the scissors and use three different shapes, one curved on the flat, another on the edge, and a third especially bent to cut free the base of the tonsil which usually lies considerably below the level of the tongue, and is difficult to cut with ordinary scissors. Under a general anesthetic the finger is one of the most useful instruments but I never employ it under local anesthesia. In dissecting the pillars free, the finger also makes a useful tongue depressor, and in addition, backward pressure can sometimes be made against the tonsil so that the knife does not draw it far from its fossa which causes after pain toward the ear.

DR. PERCY FRIDENBERG, New York City: As to tonsillar hemorrhage, ligation of the bleeding vessel is a counsel of perfection. Undoubtedly the surgical procedure described is the best, but in some cases we can not apply that procedure as we would desire; for instance, if we are called to see a case in which bleeding has been going on for some time it is almost impossible to find the vessels and catch them up and ligate them. In a case of severe tonsillar hemorrhage, as in epistaxis, the extreme restlessness and fear, the anxiety of the patient, often attended with shock and collapse or attacks of syncope, may make it impossible to get near the bleeding point until the action of the heart has been depressed, preferably by narcotic. This alone, by quieting the patient will sometimes stop the bleeding, and may be the only way of preparing for the surgical procedure which has been advised. When you are called in haste to such a case, and see blood everywhere: the patient spitting and coughing blood, the surrounding attendants "sweating blood," it is no easy matter to ligate a torn tonsillar vessel. In these instances we have to have recourse to measures which are not all we would wish, and among these measures I would mention a good strong hypodermic of morphin and digital compression.

DR. F. E. V. SHORE, Des Moines, Iowa: If we are to be so perfect in our surgical technic, and do these operations as surgeons would, it is surprising to me that one would discard the knife in a portion of the operation and use the snare to complete the work. I should as soon expect the general surgeon to use the snare in removing the appendix or for amputating a limb. It is certainly non-surgical and when the operation can be finished just as well without danger without changing the instrument, I can not see why we should not use the knife. Personally I have always used a sharp knife with a round point as sharp as it is possible to get it. It doesn't necessarily follow that I use the sharp edge at every step of the operation. As soon as I have divided the membrane, I dissect it up from the tonsil, separating the loose tissue until the tonsil is free. I do not believe it is a surgical procedure to run the finger down the throat. It is certainly not as aseptic as to use the knife which can be done just as well. I always precede the operation with the use of adrenalin.

There is one other point and that is as to the anesthetic. I must confess that I am not in harmony with the majority of the members as to the preferable anesthetic. I have operated in about the same number of cases that Dr. Casselberry mentioned, have used chloroform and in but two cases have I had difficulty. In one of these instead of using adrenalin I used adrin which I understand is twice as strong as adrenalin. In the other case, I used 10 per cent. solution of cocain applied to the throat. Both patients were children and there was temporary collapse. In a large number of cases, the status lymphaticus spoken of is really a status anestheticus. The anesthetist is at fault. Chloroform is safe if the anesthetist is familiar with his work. I never have hemorrhage any more. The patient must be prepared as for general operation, work done by preference in early morning before the patient has partaken of food or liquids. When the chloroform is administered, the patient should be in recumbent position with same after-care. I had some very severe hemorrhages in my early operations but have had none since adopting the routine method of ligation of the spurting vessels and in adults stitching the pillars. I remove the stitches in twenty-four hours.

DR. O. TYDINGS, Chicago: Beginning this work some years ago, I first used the guillotine, then the blunt pointed curved bistoury, and later the cautery, for the entire removal of the tonsil. In 1902 I began the use of the knife and snare. I would separate the pillars and free the tonsil from adhesion with sharp knife occasionally using a blunt dissector until I could engage the tonsil in the loop of the snare. I spoke of this method five years ago and was reminded that the blunt dissector had been used 1,000 years before. I still have occasional use of my blunt dissector. I think Dr. Welty has struck the keynote as to the cause of hemorrhage, as our experience at the Chicago Eye, Ear, Nose and Throat Hospital shows. Dr. Stubbs, who spoke kindly of my knife, and I do two-thirds of the throat work at that institution; he reports no hemorrhages. I have had six cases of hemorrhage reported to me in the past seven years, three of which I saw. I did nothing in either case as the hemorrhage had been arrested before my arrival. There are many means by which we can control hemorrhage; one is by producing an artificial hyperemia, by constricting the limbs, by lowering blood pressure with an injection of morphin or anything to divert the current of blood from the parts. That all are not so easily arrested is evidenced by the following: A few weeks ago I was called up by a gentleman to know what to do for a case of hemorrhage. I told him what I would do but he did not heed the advice as he had succeeded without it. When a man leaves part of the tonsil and goes back after it with a punch to remove it, he is not doing clean surgical work. The cases of hemorrhages that I have been called on to treat have been other physicians' patients in whom there had been a partial removal of the tonsil. I may run across one of these severe bleeders some day, but I haven't yet; but I certainly should not feel alarmed, if I did, if I had an ordinary pair of forceps in my hand.

DR. OSCAR WILKINSON, Washington, exhibited a curved needle by which, after packing the fossæ with gauze, one could stitch the two pillars together. By putting in two or three stitches over the packed cavity one will not have any trouble in controlling the hemorrhage.

DR. W. W. CARTER, New York City: The snare is the method I usually employ in removing the tonsils. I was surprised to hear from Dr. Wright a few days ago that probably in nine-tenths of the tonsils removed by the snare there were found to be, on the outside of the tonsil so removed, striated muscular fibers. I believe this is due to two things: first, failure to follow the line of cleavage between the tonsil and fossa in separating the tonsil prior to applying the snare; second, to pulling the muscular tissue into the snare loop before bringing it home. I have seen within the last six months three cases in which the proper action of the posterior pillars has been interfered with by the removal of a portion of the muscular tissue by the snare. There was regurgitation of liquids through the nose. I wish to warn, therefore, against the use of the snare when the tonsil has not been properly liberated from the surrounding tissue, and from too great traction being made on the tonsil before bringing the snare home.

As to the use of the hemostat, I believe that it has its use, but that it is one of emergency, and should be limited to the time it takes to get hold of proper forceps, needles and sutures for stopping the hemorrhage in a strictly surgical manner. The amount of traumatism following the use of the tonsillar hemostat has been observed by me on several occasions. I saw a case recently in which the cellulitis following was sufficient, I am afraid, to cause the death of the patient. The proper method for stopping hemorrhage is to ligate the bleeding vessel, and this principle should be adhered to as strictly in throat surgery as in other parts of the body.

DR. JOSEPH WHITE, Richmond, Va.: I have operated for the removal of tonsils considerably more than one thousand times and never had a fatality and have only seen twice what I considered a very dangerous hemorrhage. In one case, I had to ligate the external carotid artery; in the other digital compression for six hours stopped the bleeding. I have not met with any other annoying or dangerous hemorrhage, and if you want a perfectly dry field you have nothing to do but make digital compression on the carotid against the spinal column. Most of the cases of bad bleeding are in adults and not in children, and compression on the carotid in this way will give you a dry field. When you release the pressure you can see the bleeding point and grasp it with a hemostat and the best one I have used for this purpose is Jackson's. Most

cases of bleeding have been associated with nephritis, and the urine should be examined before operation in every case.

DR. D. J. MCDONALD, New York City: I wish to speak of the question of backward children. As one looks at the matter of the discussion here to-day and notes the advances being made in this new field we must come to the conclusion that whatever method we employ we should be perfect in our operation. We know that thousands of dollars are lost to the city of New York, where there are eight hundred thousand children, because of these conditions. So that it is a matter of great importance to the community at large it behooves us to stir ourselves in order to better these conditions and save the community from excessive taxation. I have followed out the line of work of Dr. Richards, which can be done without a great surgical armamentarium. There are, of course, dangers connected with every operation. We could show that at least 40 per cent. of the troubles of childhood are due to these conditions. Let us do the work thoroughly, no matter by what method, and save the state, the nation and the child.

DR. N. L. WILSON, Elizabeth, N. J.: I believe that any tonsil which needs to be removed should be thoroughly removed by a tonsillectomy. I have had more pain, more infection and more bleeding from tonsillectomy, but I believe that if the work is to be done at all it should be done in this thorough manner. I do not believe in giving morphin as it abolishes the reflexes which are so important. As to adrenalin, the majority of physicians I find use it too strong. It should not be used in a strength of more than 1 to 7,000 or 1 to 10,000. Just as good a hemostatic effect is obtained with the weaker solution. The question of light has been to me a very serious one. At the present time I am having one constructed for me on the plan of the Todd transilluminator. Ether is my choice as a general anesthetic, cocain and adrenalin for local anesthesia. The nurse is always instructed to watch the patient, and if she observes frequent swallowing to notify the doctor to examine the throat for bleeding.

DR. OTTO GLOGAU, New York City: In the April number of *American Medicine* I called attention to the importance of nasal examination in these cases. This is often neglected. It is necessary, especially for this work of education, to tell the school inspectors to pay more attention to the nasal condition of these children, as the correction of some primary nasal defect will avoid unnecessary removal of lymphoid tissue. Tonsillectomy may be indicated in some cases in which the patient or the parents are tuberculous or rheumatic. We do not yet know perfectly the function of the tonsils. Formerly the surgeons removed the whole thyroid but they do not now. When it is known that after the age of 12 or 14 years the tissue shrinks up why should we remove it thoroughly if the only symptoms are the interference with breathing? In most cases a well-performed tonsillotomy will give enough relief. The chiefs themselves in the dispensaries do not do this work and it may be dangerous if the young men should perform tonsillectomies. Besides a tonsillotomy, if done *lege artis*, takes a very long time and can only be performed under general anesthesia. Therefore at least in dispensary work tonsillotomy will be the only available method.

DR. C. M. ROBERTSON, Chicago: A great deal of hemorrhage is from the palatine and tonsillar arteries which are given off from the external maxillary, sometimes very close to the external carotid. There is likely to be a hemorrhage necessitating ligature, because the vessel is cut so short that the blood clot is forced out of the vessel by the pressure of the blood current.

DR. EMIL MAYER, New York City: In regard to my own portion of the subject I tried to emphasize the fact that not every tonsil that comes to us is grist for our mill. A child who does not present symptoms of obstructed breathing and has not had any previously existing tonsillar disease should be left alone until such time as the tonsils have had a chance to atrophy or until they become enlarged sufficiently to justify an operation. I was pleased to have Dr. Pierce make a suggestion which I shall surely follow—that of seizing the uvula with forceps and holding it out of the way to prevent its being engaged in the snare.

That anesthesia should never be given in a physician's office is absolute and positive; death after death has been reported from following this procedure. Chloroform is dangerous. These operations are done for the promotion of the welfare of these children and are not operations of necessity or emergency and, therefore, it is the more tragic if anything happens and we should be very cautious. In the adult both tonsils should not be removed at the same time.

In regard to the use of instruments: We have had instruments for the separation of the pillar; sharp instruments have been shown, and blunt ones, and we have seen some of the fingers: now I have something to show you which is in between these. I have taken the curved tonsil separator and had the edges serrated; with this the tonsil is readily enucleated. As to why we discard the knife at the final stage, that is a perfectly simple thing. We discard it in the lower portion because we have almost enucleated the tonsil and we come to the point of greatest danger and the snare enables us to complete the operation without danger. While we do not have hemorrhage we have a bloody surface and I would like Dr. Cohen to tell us how he ties these vessels. I think it is not so simple as has been expressed. As to the statement that the chiefs of clinic allow the younger assistants to do tonsillectomies, if the gentleman will visit my own clinic he will find that this is not so. My competent assistants do that kind of work and to each man is assigned a patient to be operated on and there is a check on him in the punching of the card to show who has done the operation. The junior is not allowed to do it until he has had long experience and has shown by his ability to do other things his dexterity in doing the more difficult operations; it is the last thing he is given to do.

DR. NORVAL H. PIERCE, Chicago: Dr. Mayer has expressed my ideas so much better than I could, that there is not much left for me to say. Regarding tonsillectomy versus tonsillotomy, Chicago I believe has been the battle ground. We have had some very warm discussions there and I was, and still am, a disbeliever in the removal of the tonsils as at one time advocated by some of my colleagues, For instance, in the early days of the work a gentleman showed me some specimens of tonsils encased in the lateral wall of the pharynx and of which he was very proud but which showed that he did not do a tonsillectomy, but a pharyngotomy; he took out pharyngeal tissue with the tonsil and not a little of it, either. I was called to see a patient after such a pharyngotomy. The patient was suffering with profound sepsis from which he recovered after a long illness and to this day he has a torticollis. It is very important to keep within a safe distance of the muscular tissue surrounding the tonsils and I think the snare does that better than any other instrument or method, not excepting dissection by the classical finger, described most beautifully by no less a gentleman than our esteemed colleague Celsus, who lived, as you know, some time before the present advocates of that method.

DR. LEE COHEN, Baltimore: I should like to correct a seemingly prevalent, false impression that I have had an unusual number of severe bleedings. In ten years, I have had about eight cases, which I considered more or less troublesome. Perhaps some other operator would not have looked on these as very severe. Only in the two cases reported have I had any great difficulty in controlling the hemorrhage. The ligature is used not only to guard against serious bleeding but to reduce the loss of blood to the minimum, so that in frail children, convalescence may be hastened. As to the difficulty in seeing the vessels in case of profuse hemorrhage. This can always be satisfactorily overcome by packing the fossa with from two to four gauze sponges held in Kelly clamps, the pressure from which stops the bleeding for the time being. By removing one sponge at a time, beginning from below, we are enabled to inspect the fossa in sections, and thus the bleeding point can be seen with ease.

The method of tying is as follows: The hemostat being held by an assistant, a loose single loop of No. 2 catgut is tied around the shank of the forceps and slipped down to the lower end by means of the left index finger, while the other end of the catgut is held in the right hand, no part of which need enter the patients mouth. By bending the forceps over, or as expressed by Dr. Finney of Baltimore, by "rocking" it, the loop is pushed over the end of the hemostat, where it is

held by the index finger, while the right hand draws the knot tightly. The clamp is now removed and the tying completed. With catgut, three loops should be used. Though incomplete removal may be the cause of severe hemorrhage, I can not agree with Dr. Welty, that it is the sole cause. In both severe hemorrhages reported by me, the tonsils were removed completely, with capsule intact, leaving a clean, smooth fossa. As to the removal of each tonsil separately, as suggested by Dr. Mayer, this may be advisable when a great deal of blood is lost from one side. When bleeding from the one is completely controlled by the ligature, however, before the other is excised, I can see no need of twice incapacitating the patient. I always remove both at one sitting.

There are two minor causes, which have appealed to me: One is foul breath when nothing but decomposing tonsillar secretion can be found to account for it. Another is pain referred to the ear, but in reality due to secretion pent up in the supratonsillar fossa. Tonsillectomy promptly relieves both conditions.

TRIFACIAL NEURALGIA *

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One has only to glance over the literature covering the subject of trifacial neuralgia to realize the state of mind in which the medical profession has been in regard to the pathology and treatment of that most painful affection. It is well known that the more uncertainty there is as to the etiology and pathology of a disease the more varied is the treatment and the less uniform are the results. Rarely do we see anything approaching specific treatment of a disease unless the inciting cause and the resulting reaction are known.

The suffering occasioned by trifacial neuralgia has been such as to have excited for years the interest of physicians in the endeavor to find some means of permanent relief. The treatment of the disease has varied according as the ideas of the cause and pathology have varied, and it does not seem probable that the treatment will ever be uniform until a definite knowledge of such pathology is established. It is not the purpose of this paper to present any new information on the subject as the result of original research, but rather to endeavor, if possible, to arrive at some definite conclusions on the nature of trifacial neuralgia from an examination of the already existing literature on the subject.

For a long time it has been known that certain constitutional states of the body can produce a neuralgia of the trigeminal nerve. This is occasionally seen in such diseases as diabetes mellitus, malaria, syphilis, exhaustion, chronic nephritis, rheumatism, gout, lead poisoning, *et cetera*. As long ago as 1891 Dana[1] called attention to the fact that patients suffering from trifacial neuralgia very frequently have associated with that condition one of general arteriosclerosis. This led him to believe that arteriosclerosis was the chief cause of neuralgia. This view has been supported at times by others, notably by Putnam,[2] who published in 1891 ten cases in which he found an endarteritis and a general fibrosis; and by Horsley,[3] who had already advanced the same idea in 1887. Later, in 1897, the same surgeon, in discussing the pathology of trigeminal neuralgia, stated that he had not found any more degenerative changes than could be accounted for by the age, condition and habits of the patients.

Cushing[4] admits that arteriosclerosis is a persistent condition, but asserts that it follows the neuralgia and is a result of the pain. In support of this view, he cites a case in which, before operation, the blood pressure averaged 190 mm., rising to 200 mm. during the paroxysms. Since operation the average pressure has been 140 mm. The condition of heightened blood pressure is brought about, he thinks, by constantly recurring afferent impulses, which, like hard work, lead to changes in the vessels. Undoubtedly the condition of arteriosclerosis can produce trifacial neuralgia, and in these cases the use of the vasodilators to the proper degree will relieve the pain. It is easily conceivable, also, that the constantly recurring paroxysms of pain can aggravate an already existing arteriosclerosis, so that after operation an improvement will be seen in the blood pressure.

Tumors of the base of the brain, of the skull and of the Gasserian ganglion itself, may cause a neuralgia of the fifth nerve, as can also irritative conditions about the nose and mouth. Porcher,[5] in 1903, reported six cases in which the neuralgia was due to localized inflammation in the nose, antrum of Highmore or teeth. In two of the six cases, the Gasserian ganglion had already been removed by well-known surgeons, with a recurrence of the pain. Both patients were cured by proper drainage of the antrum of Highmore.

In 1905, Snow[6] reported 20 cases in which the neuralgia was due to intranasal pressure or a collection of pus within some of the accessory sinuses. He said he had seen "many cases of the acute form of tic douloureux accompany a cold with sinus accumulation and pass away with abatement of the inflammation or proper drainage of the nose." Somers,[7] in a paper in 1906, mentions the nose as a frequent and often unrecognized cause, and states that hypertrophy of the turbines, especially the middle, not infrequently produces both supraorbital and infraorbital neuralgia. He also calls attention to inflammation of the frontal, ethmoidal, sphenoidal sinuses and of the antrum of Highmore, as causes of trifacial neuralgia.

In the mouth, impacted third molars, carious teeth, pulp nodules found in the pulp chamber, and decayed roots entering the antrum of Highmore and producing antrum disease, frequently bring about a neuralgia of the fifth nerve. It is also well known that mere exposure to cold or damp weather is sufficient to start up attacks in some patients.

The type of lesion induced by the foregoing causes, which are irritative in character, is probably either a degenerative one or a peripheral neuritis which may be ascending in character, and may secondarily involve the Gasserian ganglion. But the number of cases of tic douloureux coming under this division is small and there remains by far the greater majority in which no constitutional or local irritative cause can be found. This gives some grounds for thinking there may be two types of neuralgia; one in which the lesion consists primarily of a neuritis of the peripheral branches which may be ascending in character, and another in which the primary lesion appears in the Gasserian ganglion.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

1. Dana: Med. News, New York, 1891, lviii.
2. Putnam: Boston Med. and Surg. Jour., August, 1891.
3. Horsley: Tr. Odont. Society, Lond. 1887.
4. Cushing: Johns Hopkins Hosp. Bull., 1907, xviii.
5. Porcher: Tr. Am. Laryngol. Assn., 1903.
6. Snow: Tic Douloureux and Other Neuralgias from Intranasal and Accessory Sinus Pressures, New York Med. Jour., 1905, lxxxi.
7. Somers, Lewis S.: Nasal Disease and Neuralgia, THE JOURNAL A. M. A., 1906, xlvii, 741.

The first group might be said to include the minor neuralgias in which the pain is not so intense, or the attacks so paroxysmal. The second group includes the major neuralgias in which the lesion is primarily central. These neuralgias are characterized by their paroxysms which tend to recur more frequently and to become progressively worse and by the associated facial tic.

Is there a definite pathology to be found in these cases of major neuralgia?

Rose[8] found a thickening of the interstitial connective tissues of the ganglion, and an irregularity in the form of the ganglionic cells. On this basis he regards the disease as a chronic inflammation resulting in contraction and compression of the nerve cells. Horsley,[9] in 1897, said he had not found more degenerative changes in ganglia than could be accounted for by the age, condition and habits of the patients. Krause,[10] in 1896, found degeneration of the ganglionic cells and nerve fibers, but no sclerosis or endarteritis.

In 1898 Spiller[11] gives the following as a result of the examination of seven ganglia removed by Keen:

> The medullary substance of the nerve fibers within the ganglion and its branches is much swollen, atrophied or entirely gone, depending on the intensity of the disease. The axis cylinders similarly are markedly degenerated or entirely destroyed. The vessels are very distinctly sclerotic, in some the lumen being entirely obliterated. There is also an increase in the connective tissue of the ganglion.

Two years later Barker,[12] in reporting the condition of two ganglia after removal, said that there were scarcely any normal-appearing cells; some of the nuclei were swollen and concentric bodies were present.

Schwab,[13] in 1903, reported the microscopic findings in four ganglia, two of which were removed before any peripheral operation had been done. The condition found in these four ganglia was the same as was found in two others reported the year preceding. He said:

> In all the ganglia a certain number of distinctly abnormal cells have been found. The number is too large to be accounted for by the accidental effect of faulty technic or through any hardening or staining processes. The cell changes have been found mostly in the peripheral portions of the ganglia, and in those cells which are characterized by staining deeply, by elongated outline and by their small volume, as compared to the cells which lie in the deeper portions of the ganglia. The changes found in the cells vary all the way from a slight degree of chromolysis to profound changes of total cell disintegration and nuclear migration. In three of the six ganglia perinuclear pigmentation was present in large numbers of the cells. In one of the ganglia a sclerosis of the periganglionic tissue with excessive connective tissue formation around and between the cells was found, which was so pronounced that its pathologic significance is unquestioned. In some of the ganglia neuritic changes were found in the peripheral branches, but only in those cases in which a peripheral operation had previously been done.

Later on Schwab, from twenty cases, concludes that there is a neuritis ascending from the terminal branches; that there is an interstitial inflammation of the ganglion, and that there is a central neuralgia affecting the roots at their entrance into the pons.

In 1904 Spiller[14] stated that, of 159 ganglia examined, all presented evidences of degeneration. Davis[15] also reported, in 1904, a ganglion examined by him, which showed advanced degeneration. Gordon,[16] two years later, in eight ganglia, "found the blood cells more or less thickened, depending on the age of the patient. The nerve bundles situated in the vicinity of the altered blood vessels always showed distinct degeneration. The duration of the disease has no special bearing on the degree of involvement of the nerves." He concludes as follows:

> The occurrence of degeneration of peripheral nerves is frequent, if not constant in neuralgia. This nerve degeneration is probably a primary one which, as a neuritis, assumes an ascending condition, and secondarily involves the Gasserian ganglia; the blood vessels undoubtedly play a certain rôle in the causation of a degenerative state of the peripheral nerves. It is difficult to draw a sharp distinction between neuritis and neuralgia, as accumulated facts tend to show an anatomic basis for the latter affection.

Cases are on record in which the ganglion removed by operation has showed nothing abnormal on microscopic examination. Caminiti[17] points out that at times cellular changes are present in the ganglion when tic douloureaux has not even existed.

Dana has suggested, I believe, that the pain occurring in women in early years may be in the nature of migraine; but that after a number of years the pain becomes chronic and more definitely located in the divisions. In the beginning, he says, it may be a disorder of the sensory neuron, neither in the ganglion or in the peripheral branches, but later certain degenerative changes may develop in the branches. The pain occurring after 40 years of age is due to a definite lesion either in the ganglion or in the branches.

The type of lesion in trifacial neuralgia when present has been either a degenerative one, an inflammatory one, as interstitial neuritis, or a neoplasm. As I understand, Spiller, who perhaps has made as careful a study of the subject as any one living, and whose experience has been extensive, has not yet examined a ganglion which has not showed evidences of abnormality. And yet, in a personal communication to me, he said that he was not ready to state that there was a definite pathologic condition to be found in every case of trigeminal neuralgia. Possibly the consensus of opinion may be summed up in his words:

> I should be unwilling to say that pathologic changes will be found in every case because we must believe that in some instances sufficient time has not been given for severe alteration to develop before the ganglion was removed.

And still, if the lesion is in the ganglion, why will division of the second and third branches of the fifth nerve, as they come off the ganglion within the skull, cure, for the time being at least, the neuralgia occurring in those divisions? In certain cases of recurrence in which Abbe operated a second time, it has been found that the pain has returned with regeneration of the nerve trunks. It was this fact which led him, in 1903, to adopt the method of interposing rubber tissue between the cut ends of the nerves to prevent reunion. If the lesion is in the ganglion, why should division of the peripheral branches give relief? Have not the better

8. Rose: Practitioner, London, 1899, lxii.
9. Horsley: Clin. Jour., 1897.
10. Krause: Berl. klin. Wchnschr., 1906, xli; Die Neuralgie des Trigeminus, Leipsic, 1896.
11. Keen and Spiller: Am. Jour. Med. Sc., 1898, cxvi.
12. Barker, Lewellys F.: Microscopic Examination of Several Gasserian Ganglia, THE JOURNAL A. M. A., 1900, xxxiv, 1093.
13. Schwab: Jour. Nerv. and Mental Dis., 1903, xxx.
14. Frazier, Charles H., and Spiller, William G.: Physiologic Extirpation of the Ganglion of Gasser, THE JOURNAL A. M. A., 1904, xliii, 943.
15. Davis: Univ. Penn. Med. Bull., 1904, xvii.
16. Gordon: Is Neuralgia a Functional Disease? Tr. Coll. Phys. Philadelphia, 1906, xxviii.
17. Caminiti: Arch. f. klin. chir., lxxvii, 4.

end-results obtained in complete removal of the Gasserian ganglion been due to the impossibility of regeneration of the nerve fibers? Spiller[14] says:

> Very few ganglia have been entirely removed without relief of pain; indeed, I know of only two cases, and I am skeptical concerning these.

It seems also that we have a great deal to learn about the chemical changes in nerve cells during discharges of nerve impulses. "It seems possible that long after primary irritation has ceased, an abnormal chemical state may remain and excite the pain."[18]

We may divide the treatment of trifacial neuralgia into medical and surgical. In determining which to advise, it is necessary, if possible, to find the cause of the disease. Also the duration and frequency and severity of the attacks must be considered. It has been estimated that nearly 20 per cent. of the cases of trifacial neuralgia are amenable to treatment other than surgical. In view of this fact, it seems advisable first to recommend medical treatment to be given only for a short length of time unless improvement in the symptoms is seen. It is needless to say that in those cases recurring after some peripheral operation, medical treatment is contraindicated.

In the treatment of neuralgia of the fifth nerve by medical means, we should first remove, as far as possible, all predisposing causes, such as anemia, malaria, lead-poisoning, syphilis, etc., giving each condition its appropriate treatment. Occasionally, this alone will be sufficient to correct the neuralgia. If the patient is arteriosclerotic, the vasodilators pushed to the degree of producing a sufficient softening of the pulse may control the pain. In the migrainous type of neuralgia, according to Dana, surgical treatment should never be advised, as the lesion is probably located in the central nervous system. One has only to glance over the long list of drugs recommended for use in trifacial neuralgia to realize the uncertainty attending the use of any one. I shall speak of only one, namely, strychnin, as it seems to be the most reliable. It should be given in large ascending doses once daily subcutaneously. If a favorable response occurs, after the pain has disappeared, the drug should be gradually withdrawn.

In 1903 Zimmern[19] published an article giving the results obtained in eighteen cases treated by galvanism. He applies the constant galvanic current of an intensity of eight to fifteen milliamperes over the affected nerve endings for an hour or more at a time, after having first placed a large flat electrode over the nape of the neck, and a half mask of heavy tin-foil moulded to shape the face. In this way, as the current is distributed, no burning occurs. Of the eighteen cases of severe type treated in this way, Zimmern was successful in every case. The value of this treatment has been subscribed to in this country by Zabriskie and others.

In view of the fact that certain cases have been reported in which the neuralgia has been ascribed to nasal and buccal conditions and has been relieved by the correction of those abnormal conditions, a thorough examination of those cavities should be made. One should not be in a hurry, however, to ascribe the neuralgia to the teeth, for many patients have been martyrs to the cause in the past and have sacrificed all their teeth on one or the other side, without relief to their pain. But, as we do know that a carious tooth, antrum disease, accessory sinus disease or hypertrophied turbinates occasionally produce neuralgia, those conditions, if found to exist, should be corrected in the hope that by so doing we may reach the cause of the trouble.

Experience has shown that by the above means a certain number of cases of neuralgia of the fifth nerve will be arrested, either permanently or for longer or shorter intervals. Medical treatment, however, should be given only a fair trial. If the attacks are very frequent, severe and uncontrollable, one should advise an operation.

The injection treatment of trifacial neuralgia has been practiced with more or less success since Billroth and Neuber first began to use osmic acid in 1884. Many cures were reported as a result of this treatment. In 1900 Schlösser began to use 80 per cent. alcohol instead of the osmic acid. As yet he has not made, I believe, a complete report, but from time to time statements have been made by him and by other surgeons, showing that much is to be expected from the alcohol injections. The object of the treatment is to reach the second and third divisions just at their exits from the foramen rotundum and foramen ovale, respectively. It is not necessary to inject the alcohol directly into the nerve sheaths, but only into the vicinity of the nerve trunks. The operation is not a difficult one to do, and as yet no bad after-effects have been noticed. As a result of the injections, a degenerative reaction is set up in the nerve, the effects of which are only transitory. Anesthesia of one-half of the anterior part of the head from the vertex to the chin is produced, as well as some incomplete paralysis of the masticatory muscles, which usually passes away in a few hours, but which may, according to Ostwalt,[20] last two or three months. The nerve recovers its normal condition, but "the pathologic irritability causing neuralgia disappears for a long time."[21] Ostwalt[20] reported, in 1906, sixty cases of trifacial neuralgia treated by injections of 80 per cent. alcohol; one-third of the patients had recurrences within five months of the time of the first injection. The relapse, as a rule, however, was much less severe and was promptly relieved by other injections. In 1907, Schlösser, at the Medical Congress at Wiesbaden, reported 209 cases in which relief from pain lasted on an average about one year from the time of the injections. Kiliani has reached his hundred-and-eightieth case and states that "his failures are exceedingly few." Patrick[22] published sixteen cases with one failure from supposed inability to reach the nerve. Of the sixteen patients, four have had occasional recurrence of pain, but they refused further treatment.

A permanent cure following a single injection is not, as a rule, to be expected. Recurrences may take place at any time from five months to one year. But Schlösser says that repeated injections delay the recurrences more and more, so that an almost absolute immunity from pain may ultimately be promised these people. It would seem as if the method has been given a thorough enough trial to mark it as a very successful palliative method of treatment.

The history of the operative treatment of trifacial neuralgia has been one of failure, until the intracranial operation was advised and performed in 1890. Since then the results of operation have been steadily growing better. The peripheral operations were a failure in

18. Zabriskie: Postgraduate, 1905, xx.
19. Zimmern: Arch de neurol., xv, No. 87.
20. Ostwalt: Lancet, London, 1906, i.
21. Hecht, D'Orsay: The Methods and Technic of the Deep Alcohol Injections for Trifacial Neuralgia, THE JOURNAL A. M. A., 1907, xlix.
22. Patrick, Hugh T.: The Treatment of Trifacial Neuralgia by Means of Deep Injections of Alcohol, THE JOURNAL A. M. A., 1907, xlix, 1567.

most cases, because of regeneration of the nerve fibers. Still, in those cases in which a peripheral operation is indicated, good results may follow if measures are taken, such as plugging the foramina with silver screws or plugs, to prevent reunion of the ends of the divided and avulsed nerves. Peripheral operations on the third division, for one reason or another, are usually followed by better results than operations on the other two divisions. Frazier[23] says that, if pain is restricted to the distribution of the inferior dental branch of the third division or to the infraorbital branch of the second division, there is no question but that a peripheral operation is the one of choice, because the risk is less from this operation; a certain percentage of patients will recover, and a larger number are given relief, at least for some time One should always, however, resect a considerable portion of the nerve, or remove as much as possible by avulsion and plug the foramen.

When recurrence follows one or more peripheral operations, or when the distribution of the pain becomes more widespread and is no longer limited to one, but is referred to two or all the branches of the ganglion, the period in which the peripheral operation is indicated has passed.

There are many variations in the procedure of surgeons in performing the intracranial operation. Some surgeons, as Abbe,[24] prefer to divide the branches, resect a small portion as they leave the anterior aspect of the ganglion, and then interpose rubber tissue between the cut ends to prevent reunion. Other operators, as Cushing,[4] Krause, Lexner,[25] favor total extirpation of the ganglion; while others, as Frazier and Kocher, prefer division or avulsion of the posterior sensory root of the ganglion. Cushing, I understand, has also lately begun to perform this operation in preference to total extirpation.

The failure of the intracranial operation from recurrence of pain has been due to reunion of the divided anterior branches when the Abbe operation was performed, or to incomplete removal of the ganglion when complete extirpation was attempted. To overcome these possibilities, Spiller, in 1898, suggested that the sensory root be divided. The success of this operation lies in the fact that unmedullated nerves do not become regenerated after division; and, as the nerve fibers comprising the sensory root of the ganglion are not medullated, regeneration after division does not take place. This has been proved experimentally by Spiller and confirmed by Ballance and Stewart[26] and Van Gehuchten.[27]

The difficulties of the intracranial operation do not lie in the exposure of the ganglion, but in the attempt to free it from its bed and in the fact of its close proximity to the wall of the cavernous sinus and the sixth nerve. For these reasons, it is asserted that division of the sensory root is the easiest method to carry out and will result in a still further decrease in the mortality.

For a long time intracranial operations were held in disfavor, because of the attendant high death rate. Tiffany's[28] estimated mortality, in 1896, of 22 to 23 per cent. for many years was the basis of the argument that the intracranial operation should be advised only in case of last resort. At that time the operation was in the developmental stage and as a consequence the risks were greater than they are at present. Hartley and Frazier place the mortality now at about 3 per cent. in competent hands. Cushing has had 2 deaths in 49 cases, while in the last 25 cases he has had no deaths. Abbe, in his last 25 cases, reports no deaths.

At present, when done by experienced men, the intracranial operation for trifacial neuralgia is not attended by more danger than is the average abdominal operation.

23. Frazier: Am. Jour. Med. Sc., 1903, cxxvi.
24. Abbe: Ann. Surg., January, 1903.
25. Lexner and Turk: Arch. f. klin. Chir., 1902, lxv.
26. Ballance and Stewart: The Healing of Nerves, Macmillan Co.
27. Van Gehuchten: Univ. Penn. Med. Bull., 1904, xvii.
28. Tiffany: Ann. Surg., 1896, xxiv.

SUMMARY

Facial neuralgia may be classed as minor and major neuralgia. Minor neuralgias are due to peripheral causes, as carious teeth, disease of the antrum of Highmore, or nasal sinuses, by hypertrophied turbinates, nasal spurs, etc. The major neuralgias are probably due to a central lesion in the Gasserian ganglion, although, in these cases, the causes at times may have been peripheral.

The pathology of trifacial neuralgia is still indefinite. Although the investigation along that line has been very extensive, there still seems to be no definite lesion which can be demonstrated in every Gasserian ganglion removed. At least, some of the ganglia examined have given negative results, as reported by the pathologist. The lesion when present may be of a degenerative type, interstitial neuritis or a neoplasm (Frazier). Arteriosclerosis of the blood vessels is a common condition seen. In the peripheral nerves, there may be an ascending neuritis, which may secondarily affect the ganglion.

The treatment of trifacial neuralgia may be arranged under three divisions:

1. *Medical Stage.*—Medical treatment, often effective in the minor neuralgias due to constitutional conditions; includes also local treatment of nose and mouth; should not be persisted in too long without results.

2. *Peripheral Operation Stage.*—Peripheral operation, as neurectomy or avulsion, often effective in those cases in which one branch of a division or one division alone is affected. This stage includes treatment by injections of 80 per cent. alcohol in the region of the painful nerve, the results of which treatment have been very satisfactory. Cases for peripheral operation or treatment by injections should be carefully selected, and even in those cases there will be a certain percentage of recurrences.

3. *Stage of Intracranial Operation.*—Intracranial operations indicated in all types of major neuralgia where more than one division is affected and where medical treatment and peripheral operations have been tried and have failed. The operation advocated by Spiller, consisting of division of the sensory root of the Gasserian ganglion, seems to be the most rational one.

Note—In addition to the authorities previously cited, the following may be found of interest:

Armour: Practitioner, London, 1904, lxxii.
Bristow: Brooklyn Med. Jour., 1905, xix.
Corney: Tr. Am. Laryngol. Assn., 1903.
Gabriel: Brit. Jour. Dent. Sc., 1905, xlviii.
Kiliani: Med. Rec., New York, January, 1908.
Lathrop: Neuralgia of the Superior Maxillary Nerve, Boston Med and Surg. Jour., July, 1907.
Levy and Baudouin: Presse méd., April, 1906.
Mayo: Surg., Gyn. and Obst., 1906, cxi.
Moschcowitz: Med. Rec., New York, 1906, lxx; 1907, lxxi.
Murphy, John B.: Osmic Acid Injections for Relief of Trifacial Neuralgias, THE JOURNAL A. M. A., 1904, xliii, 947.
Rickets: Virginia Med. Semi-Month., April, 1906.
Sherman, H. M.: Intracranial Neurectomy for Trigeminal Neuralgia, THE JOURNAL A. M. A., 1904, xliii, 941.
Spiller and Frazier: Philadelphia Med. Jour., October, 1902.
Van Lennep: Hahnemanian Monthly, August, 1903.
Wiatt: Trifacial Neuralgia, St. Louis Clinique, 1907, xx.

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ABSTRACT OF DISCUSSION

DR. EUGENE S. TALBOT, Chicago: I have had very little experience in the general treatment of trifacial neuralgia. Perhaps some of the most obscure cases are those in relation to irritations about the jaws and teeth. The most difficult cases I have been called on to treat are those in which there has been interstitial gingivitis for a number of years, with absorption of the alveolar process and in which the nerve fibers running into the apices of the roots have become exposed. In some cases it is very easy to diagnose these conditions, especially when the teeth are loose; on the other hand, there are obscure cases in which only one side of the alveolar process has been absorbed and the tooth still remains tight. The pulps are alive in these teeth, and it is only after exclusion of other conditions that we are able to locate the pain. In these cases the only thing to do is to destroy the pulps of the teeth. Other cases which are common and difficult to diagnose are those in which secondary dentine has developed in the dental pulp, or pulp stones. While all of us understand the pathology of the dental pulp, to a certain extent, yet from my experience in the study of this organ, I believe no one has a full idea of its pathology. It is a singular thing that within the last few years we have noted that certain conditions of the system such as autointoxication, blood poisoning, no matter whether due to drugs or systemic conditions, affect this organ, and it is one of the first structures to become involved in autointoxication. The pulp is an end-organ situated within the tooth. There are only one or two blood vessels and nerves entering the root of the tooth, where they multiply and divide and become a large mass, as compared with the entering nerves and arteries. This mass is enclosed in a crypt or cell. Toxins circulating in the blood, no matter what they may be, enter. The moment the pulp becomes engorged with blood there is stasis. Indicanuria, acidosis or any form of blood poisoning, causes this organ to become so involved that many of the diseases due to irritations are developed and deposits of secondary dentine, the formation of calcification islands, and the pressure on the nerve fibers in the pulp cause facial neuralgia. These are important pathologic conditions to the stomatologist. The average general practitioner would never locate the cause of the facial neuralgia in these structures. In cases of facial neuralgia, the stomatologist and the general practitioner should consult in order to locate the cause of the pain. The treatment outlined in this paper has become one of the fixed methods. I would like to hear more in regard to it.

DR. M. L. RHEIN, New York: As an observer I have carefully noted for some years what has been done in these cases, and from my own observations I have reached the conclusion that the general surgeon is prone to underestimate the number of cases of major facial neuralgia which develop from peripheral causes, which must originally have been minor neuralgias. This is the portion of the essay which is of especial interest to our Section. It is my belief from observation that the percentage of these cases that are ascending, as he puts it, is very much larger than is generally credited, and there is good reason for the fact that the general surgeon does not appreciate the number of cases that start in this manner. In the first place it is very rarely that he has the opportunity to come across these cases in the initial condition when it is purely of peripheral origin. But every stomatologist of any experience has had so many cases of this kind that have eventually terminated in the major form, that I feel we can all substantiate this point.

The question that is of peculiar interest to us is the prevention of major neuralgias by radically treating them in the condition that they present to the stomatologist when they are of peripheral origin. As I understand, Dr. Talbot was discussing the effect of the pathologic condition of the pulp of the teeth in these cases. It is in this very respect that I have been looking for the real etiologic factor of the peripheral origin of these cases for a number of years. Dr. Vida Latham has been very helpful to me for a number of years in mounting pathologic specimens of pulps of this nature which I have sent to her, and the microscopic examination of these pulps has borne out this fact. The peculiar relationship that the pulp has to the teeth when it is subject to unnatural irritation, is one that is bound to result in more or less of a pathologic condition at various periods of stress due to this irritating action, and it is my conviction that a great many dental operations are primarily at fault for this irritating and painful effect on the pulps of the teeth. In my experience the patients have been benefited to a great degree by absolutely eradicating the neuralgia when the case has been seen early enough before the disease has extended sufficiently into the nerve fiber itself, by the thorough removal of the pathologic pulp. In this respect I believe that when the offending tooth has been distinctly located, there has often been failure to produce the desired results.

It is absolutely essential in these cases that the pulp tissue should be removed to the very end of the root canal. In a majority of these cases crystallization of the pulp tissues has started and progressed to some extent, and this makes the removal of such pulp tissue in the multi-rooted teeth, where it generally exists, a very difficult matter, and instrumentation alone is never successful in satisfactorily accomplishing these results. When an operator discovers that he has located the real origin of this trouble in such a tooth, and is unable to remove every particle of the contents of those canals, there is only one recourse left, and that is to remove the tooth. In my experience the number of such teeth removed is very small, and only occurs when the irregularity of the roots in very great. The *x*-ray is of great help to the stomatologist, not only in giving him aid in diagnosing the offending pulp, but in informing him when he has satisfactorily reached the end of such roots. I could recite a number of cases that have passed into my hands after such pulp removal has been attempted and not successfully completed, in which, on completion by removing the contents from each of these canals, the result has been satisfactory. When the case once departs from this condition and reaches the unfortunate state described by the essayist as the major form, no method yet devised can be absolutely depended on.

I have paid special attention to the statistics regarding injection of alcohol, and I have found that my patient is relieved sometimes for a year, and even for two years; but recurrence of the major neuralgia finally ensues in a large number of cases treated in this way. I believe this to be due to the fact that the injection of the alcohol does nothing more than paralyze the nerve tissue involved at this period, and that when this action has been finally thrown off, as it generally is in time, the old condition recurs so far as major operations are concerned, therefore I am in hearty accord with what I judge is the technic of the essayist. I believe that when it is incumbent to have an operation of this kind, only the most radical offers any permanent results.

DR. J. E. POWER, Providence, R. I.: This error of faulty diagnosis is not confined entirely to the members of the dental profession. It is true that numbers of teeth are extracted for neuralgias which are not of dental origin; but this same error exists in the ranks of the neurologist, the surgeon, and the physician. By the very direction of their interests they are likely to see things from their viewpoint alone. I believe that the surgical procedure for the treatment of neuralgia should be the last thing on the program of treatment, and that while the dentist is bound in the interest of justice to refer his patient to the neurologist, the neurologist and physician have an equal responsibility, and they also are bound to refer such a patient to the dentist. While there are numbers of cases in which all the teeth have been extracted from a patient for relief of neuralgia with negative results, major operations are performed when proper examination and treatment of the teeth would reveal the cause and perhaps cure the disease. I believe that there is a very small percentage of those cases, which have become chronic, that can be traced directly to a dental origin, but the number is sufficient for us to give proper consideration to dental pains as a probable etiologic factor in neuralgia. Possibly Dr. Hussey will tell us whether or not there is any danger of tumor formation at the ends of the nerves when rubber has been interposed, and the relative danger of its presence. Since he has a wide experience in the medicinal treatment of neuralgia I shall be glad to have him relate his experience with aconitin.

The following is a brief history of a case which came under my treatment about four years ago. A patient, about 35 years old, suffered with neuralgia during varying periods, for five or six years. During these periods relief could be secured only by the administration of drugs. Examination showed a normal oral cavity. The lower third molar had been with difficulty extracted some three or four years previous. I performed an exploratory operation in the region of the extracted tooth which consisted of cutting through the tissues, chiseling through the bone, and establishing a communication with the inferior dental canal. Everything seemed normal, so I dressed the case, and in due time discharged the patient. Three years have now elapsed and there has been no recurrence of pain since two days after the operation. I do not know just what happened to cure the pain. We all know that in a process of repair of bone a callus is formed. I believe that in the extraction of the third molar referred to, the dentist had injured the bone. During the process of repair which followed a callus probably formed on the inner surface of that canal, which was just large enough to produce pressure on the inferior dental nerve. This of course is theoretical reasoning, but that the patient is cured is indeed fact.

Another case which will show the relative importance of dentistry to all other branches of medicine is the following, which had been diagnosticated trifacial neuralgia by several physicians, including a noted neurologist. The patient was prepared for an operation which would remove the second branch of the fifth nerve. The incision was made just below the orbit. When the bone was broken through pus flowed steadily from the antrum. The antrum drained and the patient was discharged cured. Is it not reasonable to believe that if the patient had been referred to a dentist or to a nose and throat specialist, the modern dentist or specialist would have examined the antrum by transillumination or other methods and even in the absence of any subjective symptoms would have made a positive diagnosis, thereby increasing the happiness of the patient.

DR. M. L. RHEIN, New York: My experience with the application of cold and heat and electricity in these cases is not very satisfactory; in the majority of cases they do not give the exact diagnostic results we desire. I have had success in reaching the tooth involved by a careful radiograph of each individual tooth in turn so as to not get one large radiograph of one side of the jaw but simply a non-distorted shadow picture of each particular tooth and its surroundings. It is generally at the point where the pulp with its circulation enters the root canal that the evidence of this inflammatory action becomes evident, and a careful study of most of these radiographs will show the effect of the inflammatory action on the alveolar structure in this neighborhood.

I do not mean to confine the dental irritation entirely to pulp effects. There are all kinds of dental disturbances that will act as peripheral etiologic factors in these cases, but nothing is so prone to do so as the condition in the case described by Dr. Powers. The number of cases due to the roots of the teeth impinging on the inferior dental canal itself has come to the obervation of almost every one of us, and this is also true of the effect of leaving portions of the roots of the teeth in the jaw after such teeth have been extracted. It has been my misfortune in a way to find myself at loggerheads with a number of men in my own locality, who are specialists in the extraction of teeth, for the simple reason that it has been the dogmatic practice of the majority of these specialists in extraction, that when they fracture the roots of the teeth (and there is no blame to be attached to them for that), and find that there is no purulent condition surrounding the roots of the teeth they calmly advise the patient that they need give no further consideration to this portion of the tooth left in the alveolus, and I have found it impossible at times to get such a specialist to remove such pieces. There is no factor more prone to produce peripheral irritation than a piece of root left, especiallly in the neighborhood of the inferior maxillary sinus.

DR. U. C. WENDELL, Milwaukee, Wis.: Not as a neurologist or pathologist, but as a general practitioner, I am much amused at the remarks made here about the general practitioner. In diagnosing these conditions, especially inflammation of the bone, cold and hot water may be used, and also the *x*-rays, but the response may be due to an inflammatory condition, or it may be absolutely reflex. The idiosyncracy of the patient ought also to be taken into consideration. Diagnosis of a remote disease of this kind is very difficult, even the most skilful physicians and surgeons have made the greatest mistakes in conjunction with the dentist. I have known of teeth being extracted indiscriminately without any relief of the condition. I recall an instance of a small root being left in the alveolar process. The tooth had been extracted years ago. This patient was under my care for two or three years, also under the care of a physician. He came in about six months ago and said this tooth was troubling him and it would have to be removed. I told him I did not believe there was any tooth trouble, that it was a reflex from some other source. The tooth was removed. Eventually I used the exploring needle and found the remains of a small root. I removed this also, but the man came back inside of several months with the same trouble; no doubt of reflex origin. He died of endocarditis.

The reflex action of the stomach and intestines is remarkable. I recall a patient in whom, when these stomach and intestinal conditions would come on, a swelling on the left side of his tongue would appear. This is outside of the discussion, but only goes to show how misleading cases may be.

DR. E. A. BOGUE, New York: During the past thirty years I have extracted or caused to be extracted only five good firm teeth. At present I have a case which has been going on for two years. The patient has been to nine different physicians, and no one has been able to discover the cause of his neuralgia. One man thought he found it in the inflammation of the Eustachian tube. He treated him and the pain subsided and stayed away for three weeks; then it returned. No one has since been able to stop that pain for more than three consecutive days. I do not think any one stopped it; it stopped itself. Thirty years ago in New York the practice of examination of each tooth separately was advocated and Dr. Bronson read a paper at that time advocating the isolation and careful examination of each tooth. I have myself subjected my teeth to examination by six or eight different men. One hurt me so much I did not get over it for two days. Not one of them, according to my idea, made a proper examination.

A surgeon, one of the professors of the Post-Graduate Medical College, brought a woman to my office with a swelling in the roof of the mouth. I suspected some trouble with the permanent molar on the right side. She said, "Impossible, I have just come from Dr. So-and-So a week ago, and he said my teeth are in perfect order." I found on the right side two cavities between every two teeth. Dr. Rhein intimates that we do not get the results we are after along diagnostic lines. It seems to me that we should outline among us here a careful examination of such a nature that it may be possible to those who can not afford radiographs of each case. That is not applicable to people at large. We have not time to put in that way, and the patient can not afford it; the great bulk of sufferers can not have it. A specialist and (so-called) oral surgeon described at Albany one time a case of pulp nodules, as he called it, which he had been able to diagnose causing facial neuralgia. He agreed with the patient that he would cure him for $1,600, and after an examination he found a big hole and put some arsenic in, and got his $800 to begin with. After the arsenic had been there twelve or fourteen days the slough was removed and he got his other $800. The facial neuralgia was cured.

I will confess my own utter inability to conceive any cause for the facial neuralgia which exists in the case which I mentioned. Transillumination has been tried. Every single tooth in the mouth has been either isolated by a rubber dam or cotton or both. There are a number of vacant canals. The patient's mouth has not been radiographed. I made the suggestion to him, but it has not been done to my knowledge. The pain is referable from time to time to the Eustachian tube on the right side. I feel certain there is no pulp exposure anywhere, no calcic abscess anywhere. I have not drilled into the roots.

I am glad Dr. Rhein has concluded that it is not wise to leave any pieces of pulp in the canal, and I hope he will agree that they are not easily removed in their entirety. I have seen several canals so small that it could not be removed at all.

DR. M. L. RHEIN, New York: I felt in the discussion of this subject we should not enter into the question of dental technic, but I do feel that so long as this is going into print I want emphatically to contradict the final statement of Dr. Bogue that it is impossible to remove the pulp contents of fine dental canals, and of the impossibility of removing pulp contents unless arsenic is used. I can demonstrate by means of radiographs of such cases the possibility of the stomatologist getting to the end of the finest canal, and I also want to protest emphatically at this time against the use of arsenic in treating these patients at all. I take an entirely opposite view from Dr. Bogue in this respect, because the very action of arsenic, its irritating effect on the tissues involved, is of such a nature that it is not an unusual etiologic factor in producing peripheral neuralgias.

DR. F. V. HUSSEY, Providence, R. I.: I agree with Dr. Talbot in ascribing a great deal of importance to intestinal conditions. I believe thoroughly that the toxic state of the body resulting from a disordered intestinal condition has a great deal to do in many instances with so-called cases of facial neuralgia. The question of dividing neuralgias into minor and major types is simply theoretical for ease of discussion. We can not draw a sharp dividing line. I am of the opinion that the majority of these cases are of peripheral origin. The mere fact that we can not lay a finger on the peripheral cause does not necessarily mean that no cause is there. We know the body is constantly receiving peripheral stimuli, whether we are awake or asleep, and the fact that we are not always conscious of them does not necessarily exclude them.

Another thing which makes me think the pathologic findings which have been recorded in ganglia have been due to peripheral causes are that these findings are always very much more pronounced after preliminary peripheral operations; and in studying pathologic ganglia we should draw a distinction between ganglia which have been removed before peripheral operation and those removed after peripheral operation.

One point I wish to bring out is that medical treatment should not be indulged in too long without satisfactory results. The mere fact that a patient comes into your office and you prescribe for the pain and for the time being stop the neuralgia, does not necessarily mean that you are doing right by allowing that patient to drift along until he comes back. I think that if after three or four months of medical treatment a patient shows no signs of improvement he should be turned over to some one who can institute more radical means.

Thorough examination of the mouth, nose, eyes, ears, etc., should be made in all obscure cases. If we can eliminate disease of these structures we are so much better off.

While I believe that a cure can be promised much more definitely as a result of intracranial operation, we can not always do it. Other methods bring good results, and although they may be only temporary in the majority of instances, we can promise relief for a short time anyway.

The percentage of relief with alcoholic injection has been higher than with any other so-called palliative treatment. The mere fact that these cases recur five months, on an average, after the first injection, is no argument against the use of that method. It has been the experience of men using this method that recurrences after repeated injections become farther and farther apart.

Dr. Schlösser, who has had more experience than any one else, has taken the ground that by repeated injections you can offer a patient definite cure. It seems to me that the fact that the pain does recur is no argument against the injection treatment. I think Dr. Powers' theory in the case he recites, of a callus resulting from some injury to the jaw when the tooth was extracted, is a good one. We do know that certain exostoses will produce neuralgia, and there are cases on record in which removal has cured the trouble.

A STUDY OF MALNUTRITION IN THE SCHOOL CHILD *

[EDITOR'S NOTE: The article with the above title, by Dr. E. Mather Sill, New York, appeared in THE JOURNAL, June 19, before the discussion thereon had been submitted to the speakers for correction. The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

DR. E. S. TALBOT, Chicago: This paper covers so much ground that it is difficult to discuss the entire matter. There are some points, however, of unusual interest to stomatologists. We all know that adenoids occur at an early age; this is also true of deformities of the turbinates and other bones of the face, nose and jaws. If the child be poorly nourished during the period of development—from the first to the twelfth year—it stands to reason that these tissues will cease to develop and will not improve later in life; that is to say, they become arrested or excessively developed and remain so. Since the brain presides over the development of the tissues of the body, when the brain is not properly nourished the poorly nourished nervous system affects the blood supply, produces arrest of development of the face, nose and jaws, and malnutrition of the teeth. I have called the attention of the profession for the last four years to the fact that the teeth are involved in malnutrition. In the eruptive fevers and other constitutional diseases the teeth do not develop strength as they would in health. I think the essayist has brought out these conditions in a general way very well. We all know that the slum children of European cities, as well as of New York, are the most poorly nourished, have the greatest deformities of the face, nose, and jaws, with adenoids, hypertrophies, etc. It is in our province as physicians and dentists to aid these children toward being properly nourished and cared for, more especially during the early developmental years, and I am sure much could be done toward alleviating, or rather preventing, deformities of the jaws and teeth, which in turn would in a large measure improve their mental qualities.

DR. W. C. WENDEL, Milwaukee: In our city we have been endeavoring to ascertain whether the children in the poor wards in the school districts are more subject to dental caries than the children in the better wards. We find very little difference between these poorer children, who have probably never consulted a dentist, and those in the better districts. We investigated some of the other school districts, where they are not exactly the poorest, but the medium class, although in these districts some attention is paid to the teeth, yet we find practically the same conditions, viz., dental neglect. Carious teeth among these children is not even so great as it is among our "better class." Tuberculous patients often have extremely fine teeth. In other cases, in which the parents are apparently healthy, we find exceedingly carious teeth in the children. Investigations have not been carried on extensively enough in this direction to be of much value, but I am of the impression that there is something deeper seated in the civilization of our people than local causes. At the same time we can not deny that malnutrition has a great deal to do with the building up of the osseous structures.

DR. E. A. BOGUE, New York: Dr. Sill did not go far enough back in his discussion. We must go back to infancy to trace the history of most of these carious teeth in children. Dr. Cronin, as you all know, has done considerable work in the matter of examination of school children. He is even now arranging for a system of school-houses, desks and seats, and a dietary and general treatment for all children under the care of the teachers. He takes the ground that we are not sufficiently paternal in this matter. That, having taken charge of the children during the hours of so-called education, we should care for them morally as well as physically. He points out that if physical defects can be corrected, either by diet or anything else, that it will cost less to correct them than to

* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

suffer the absence of children so constantly from school. I have elsewhere taken occasion to allude to the fact that 40 per cent. of the absences of school children from school are due to dental conditions—preventable by proper care.

Referring to the dietary, there is one thing that should be added here—the performance of function. There can be no perfect development of an organ unless its function is brought into use. If the masticatory apparatus is brought early into use, development will be far better than it is.

DR. E. S. TALBOT, Chicago: As to Dr. Bogue's criticism, I was not speaking of prenatal influences. No doubt the first period of stress is the most important to be considered. All deformities of the new-born are due, to a greater or less extent, to malnutrition, as the essayist has said. The effect, however, may be originally on the mother instead of the child.

DR. M. L. RHEIN, New York: I think Dr. Bogue has called attention to the most important feature of the whole subject. As I understand it, the essayist is endeavoring to elicit the sympathy and care of the state in overcoming this condition of malnutrition in school children. That the condition exists is most evident, and I think a careful investigation of the facts from an economic point of view will bear out the correctness of the theory that if the state intends to educate the children it can not overlook the fact that the children must be maintained in a proper physical condition to be educated, but I agree with Dr. Bogue that mere dietary considerations are not the all-important consideration. In other words, the condition of malnutrition can not be corrected by dietary measures alone.

Dr. Bogue has fittingly alluded to the fact that function of the parts must be maintained. It is impossible for us to correct the antenatal conditions. That does not lie in the power of the state. The conditions that tend to the production of deformities and caries of the teeth exist, but the point remains that the malnutrition can not be corrected unless those conditions are primarily attended to. When these conditions exist, on account of the pain involved and the discomfort, the children will not masticate their food; so the first consideration is to put the mouths of these children in a condition that will make mastication possible, in order to produce the proper metabolic changes in the food to bring about assimilation and digestion. I think it becomes our duty to point out the fact that all the conditions resulting from malnutrition are to a large extent dependent on the proper mastication and insalivation of the food before it is swallowed, and that without the performance of these functions digestion and assimilation of the food becomes impossible. It is therefore essential that the organs of mastication be placed in a normal condition before that child will be able to use them properly.

DR. ARTHUR ZENTLER, New York: From information I gather from abroad, I find the subject has been gone into very thoroughly there—that they recognize the need of the state taking care of the mouths of the children. This is especially so in Germany, where Dr. Jessen and Dr. Rose have organized the school dental clinics, and the care of the children is begun in the kindergarten.

It seems to me that with proper care in infancy and in the kindergarten the question of the teeth of the public school children would be to a large extent solved. If we will do something toward the development of the maxilla and the mandible of the child in its infancy through proper nourishment, it will not be necessary, as a rule, to do anything in future years.

DR. G. I. BROWN, Milwaukee: I feel that we are under obligation to the essayist for the results of his great undertaking in examining 1,200 children on the East Side. He has dealt with their sociologic relation to our special field as affected by poor food, bad air, lack of air space, etc. It is plain that oral disease resulted, not only from immediate ill-nourishment in the instance of each individual, but that it went back to the time before he was born. If the mother did not have sufficient food or air, and was bearing ten or eleven children, one right after the other, it was impossible that these children could have been sufficiently nourished. Therefore, each of these factors have had an influence on the child. Dr. Wendell's point is well taken when he calls attention to the fact that it is not so much the kind of food,or the amount taken, but the benefit derived from what is taken, and, more than that, the part of the individual which is most benefited. We must not assume that only poor people have caries. After all, the question is, how much or how little of the food taken is of nutritive benefit to the individual and what effect this has on dental caries. I do not know any better way of getting at this than by such work as has been outlined by Dr. Sill in his paper. I think we are to be congratulated on having such a paper in this Section.

DR. W. C. FISHER, New York: I agree with Dr. Brown that this question is more of a sociologic problem than most of us realize. Unless one has worked in poor sections he can not appreciate the labor necessary for the production of such a paper as has been presented. These investigations are necessarily conducted in the congested districts, because it is here that we find these conditions to such an alarming extent. And how can it be otherwise under existing conditions? How can a laboring man who is fathering from seven to ten children earn enough money to procure food and shelter for them? It is impossible. It therefore sifts back to the sociologic problem. How can we better the condition of that family so that that man can provide for his family?

Dr. Sill compares conditions here with those in England, Scotland and Germany. He takes nations in which the people are all of one nationality. It is far easier to school a nation by its own people. The East Side of New York is made up of the most conglomerate collection of humanity imaginable. You can not teach these people—you can not talk to them; they speak so many different languages—hence the only way is to legislate for them. In other words, these immigrants—for they are mostly immigrants or children of immigrants—come in by tens of thousands and go to these already congested districts. The father can not get work; he can not provide food; and as a result we have these physically impoverished children. The whole remedy, it seems to me, will be found in the word "scatter." If these people could be distributed to the less congested districts, where they could find employment and better air, you would find they would provide food for the children, and the children would find a way to masticate it, and if they complain of the toothache they would be sent to the dentist. Those people are human beings. Give them proper environment and they will improve. We can not expect to improve them under existing conditions. They are massed together so closely it is like taking an ant hill and pushing it down in one place and it comes back in another. Good tenements won't do the work—get these people out of the tenement district. Dr. Sill states that within a few miles there are many thousands of people, enough to make a city. The moral tone is bound to be low, and the mind affects the body. There can not be a healthy body with an unhealthy mind. Until you change their conditions you can not help them. You can give them food every fifteen minutes and they will not profit by it.

DR. W. C. WENDELL, Milwaukee: Dr. Fisher spoke more on sociologic and moral lines. What I would like to know is: Do you find more caries in the mouths of this class of people, and more pathologic conditions, irregularities, adenoids and contracted arches, than you do in the better-fed class?

DR. E. A. BOGUE, New York: One of the British writers on the subject of adenoids called attention to the fact that on the equator about 3 per cent. of the population had adenoids, while in Greenland there was something like 40 per cent. I talked with Dr. Grenfell of Labrador, the missionary-physician, who told me that he thought there was over 30 per cent. in Labrador. There the people live largely on blubber. In the north of Scotland and certain parts of Germany, where the people eat oatmeal cake, which is hard and requires mastication, you will find good teeth and few adenoids—that is, among the older people. I have not examined the children. But in the generation of today you will find "store teeth." The young folks eat oatmeal, but they do not eat the hard cakes. This is not universally so, but to a large extent the young people eat too soft foods. Our calling is still one of repair; we have not been able as yet to exert the prophylactic measures to prevent these conditions of early decay of the teeth. We are still searching.

DR. M. L. RHEIN, New York: I think Dr. Bogue is just a little wrong in saying that our calling is one of repair. While I am ready to admit that the ideal state of prophylaxis has not been reached in stomatology, yet there is no specialty in the entire field of medicine that has the possibility that we have in stomatology. Of course, the abnormalities of birth that come from defective parentage are those that can not be prevented after the child is born. These are economic and sociologic questions that are not under consideration; but, when they can be placed aside, the future of stomatology lies exclusively in prophylaxis and not in repair. I also disagree strongly with Dr. Fisher's remarks on this subject when he says that it is possible to scatter any such heterogeneous population by any enactment of legislation. In the first place, I know the East Side of New York. I have studied it very closely and I want to say that the people there are employed in occupations—they could not remain there if they were not. It is true their employment is such as is found in London in similar localities, but his prescription is an impossibility on the start because there is use for the employment of these men. If he would modify his statements and say that efforts to induce some portion of this population to be moved to the suburban districts were enforced it would be beneficial. Now, such efforts are being made constantly in the City of New York, but the impossibility of doing anything of this kind effectually is self-apparent. The improvements in the housing of this population have been going on for years, and a great deal of benefit undoubtedly accrues from efforts in that direction. The old tenements, such as were a disgrace to the city, can never be re-erected in the City of New York. The law prevents anything of that kind in the future, and there is no question of a steady improvement in that direction, but I do insist on the point, with all due reference to the value of proper air, ventilation, etc., that it is impossible to get the benefit of proper growth and nutrition unless primarily the dental organs are in a condition of normality, so that they will be used by the child. Consequently, I claim that it is the duty of the State, if it intends to educate the child, to see that the teeth are in such a condition that the child will masticate its food, just as it is the duty of the State to see that the eyes are in such a condition that they can be used normally; and I believe, when you come to sift this whole matter, that that is the most important point that will be left for consideration in order to accomplish the results that the essayist is looking for.

THE TONSILS AND THE TEETH *

[EDITOR'S NOTE: The article with the above title, by Dr. G. Hudson Makuen, Philadelphia, appeared in THE JOURNAL, June 19, before the discussion thereon had been submitted to the speakers for correction. The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

DR. FREDERICK LESTER STANTON, New York City: Dr. Makuen suggested the possibility of the enlarged faucial tonsil having a direct mechanical effect in pushing the alveolar process and teeth of the lower arch forward of their normal position, and that he has been unable to find anything similar to this theory in the literature of this subject. There has, however, been a similar theory advanced. In order to relieve the pressure on the enlarged faucial tonsil, the child has held the mandible forward, causing the teeth to lock in a malrelation, and in consequence the mandible has been developed to meet the needs of these unbalanced muscular forces, in this way producing a protruding lower jaw.

DR. CHARLES K. TETER, Cleveland: I am much interested in this subject, as I have been closely connected with this kind of work for the last six years, but I do not entirely agree as to the necessity of complete extirpation of the tonsil, that is, in the majority of tonsil operations that are done by throat specialists to-day. I have worked with eight or nine leading specialists, and there are probably four or five who do complete extirpation every time they operate; and the others use their judgment in the matter. I have been in a position to compare the results of these operations, and when it comes to my own children—I have three and two had to have their tonsils removed—I prefer tonsillotomy. One child, 8 years old now, was operated on four years ago and has never had any trouble since. The other, about 4 years of age now, was operated on about a year ago. In children it is necessary to give a general anesthetic, and a tonsillectomy under these circumstances comes near to being a major operation; the hemorrhage is profuse, and it takes some time to do it properly. In an adult it is different, because complete extirpation may be done under a local anesthetic. I have had opportunity to follow up a good many cases, and I find in the majority of cases in which tonsillotomy was performed the after-results are just as good as in tonsillectomy.

Complete extirpation does not always end the trouble. Cicatricial tissue forms, which one of the surgeons states gives him more trouble than leaving part of the tonsil.

I have known in the last year of four cases of hemorrhage in which the patient almost lost his life, and the tonsillar pillars had to be ligated to stop the hemorrhage; so I do not think we should do a tonsillectomy in all these cases. I prefer tonsillotomy in children; in adults, if they have diseased tonsils, I prefer complete extirpation under local anesthesia.

DR. G. V. I. BROWN, Milwaukee: I had the pleasure of seeing Dr. Makuen operate last summer, and I am willing to subscribe to whatever he says with regard to methods of operation in tonsil removal. One point in his paper which I believe to be important has not been touched on in this discussion, that is his reference to tonsils which are enlarged, but not visibly so, because they are buried between and behind the faucial pillars. Recently I was asked to examine a patient who seemed to have rather small, certainly not large, tonsils, and a few minutes later two enormous tonsils were placed in my hands that had been dissected out from under the overlying tissue for the same individual. Undoubtedly, tonsils such as these would cause the conditions Dr. Makuen has called attention to, and unfortunately, if dentists depend on themselves for diagnosis, such conditions would often not be discovered sufficiently early to prevent their leading to serious pathologic results.

DR. E. A. BOGUE, New York City: We all know that children whose tonsils are enlarged will close their teeth in such a way as to promote an irregularity of the dental arches. I happen to possess models of two children taken at different periods of their lives during three or four years, and I think that the progress from almost a normal condition to very great abnormality is evidenced very clearly in those models. It is exceedingly interesting to me to hear Dr. Makuen bring that very point up. I have never heard it alluded to before. I am glad that Dr. Makuen spoke of the vicious circle—bad tonsils and bad arches. This is indeed a vicious circle, and as the proceedings of this section will be read more or less by medical men and by dentists, I think that is an important point which has been pretty much neglected. That the attention of dentists is being more and more directed to the entire oral cavity is unquestioned.

DR. E. S. TALBOT, Chicago: As to infection of the alveolar process referred to, I do not quite understand just what Dr. Makuen means by the relations of the tonsils to the teeth. There is no question but what there are germs in diseased tonsils, and there are germs in decayed teeth, but how the tonsil can affect the teeth I do not understand. But there is this point in relation to the teeth which I think Dr. Makuen intended to bring out, and that is that in all patients we have more or less interstitial gingivitis, inflammation of the alveolar process and the gums. We can not have infection of those structures without first an inflammation, then there must be pus germs to infect the part, which would be understood as pyorrhea alveolaris. When the tonsil becomes infected with pus germs we have interstitial gingivitis producing pyorrhea alveolaris, and on treating the tonsil or removing it and afterward curing the pyorrhea alveolaris, it does not occur again, although the interstitial gingivitis may remain. The vicious

* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

circle is all important, especially in younger children; the effect on the general system—on the blood and the nervous system is vicious. It prevents growth and development of the jaws and the face and nose as well. We all have seen children develop very rapidly after correction of these conditions.

DR. G. HUDSON MAKUEN: I had expected that more would be said in the discussion with reference to my note on the effect of hypertrophied tonsils on the alignment of the teeth and the development of the alveolar arches. I have been able to find no reference to this point in the literature, and I should have liked to have had a fuller expression of opinion on it. It should be borne in mind that these large tonsils are sensitive to pressure, as a rule, only when they are acutely diseased, and only a little pressure sometimes is required to determine the position of the teeth and the shape in the alveolar processes. The relation between the faucial tonsils and the cervical glands is a very close one, as has been shown by anatomic dissections, and one observer, after the removal of some cervical glands, actually passed a probe from the wound in the neck into the faucial tonsillar fossa. The other day I removed the tonsils of a small child having a bunch of cervical glands nearly as large as my fist, which almost entirely disappeared in the brief space of one week after the operation. In other cases glandular enlargements in the neck may and do occasionally increase immediately after operations on the tonsils, which fact shows the close relationship existing between these structures.

As to the comparative merits of tonsillectomy and tonsillotomy, I would say that there seems now to be but little discussion. In the recent meetings of the two largest American laryngologic societies, only one man of the three hundred lifted up his voice in favor of the partial removal of the tonsils, and he was one who had long been a practitioner of the specialty, and he was loath to give up his older methods. Only diseased glands, of course, should be removed, and when we have once decided on the operation, I think we should remove all the diseased tissue, and we should not be deterred because the operation is more difficult or because there is likely to be more hemorrhage. With reference to this last objection, I may say that there are those who think the hemorrhage is greater after tonsillotomy than after tonsillectomy, because blood vessels cut through in fibrous tissue do not contract so readily as those not so surrounded. The operation is not a simple one, but requires some skill and dexterity. The removal of only a portion of the tonsil, beyond giving more breathing space, may do more harm than good by making of the diseased stump a more fruitful source of infection.

Dr. Brown's point with reference to submerged tonsils is a good one. The tonsil that protrudes into the pharynx and hangs, as it were, by a pedicle, is probably the least harmful, because it has better drainage and it does not admit of so much absorption of infected material in the general system. In reply to Dr. Talbot, I am of the opinion that foul detritus exuding from diseased tonsils must have a more or less injurious effect on the teeth, and from what he has just said, I gather that he agrees with me thoroughly on this point.

Clinical Notes

GONORRHEAL EXOSTOSIS OF THE OS CALCIS

REPORT OF CASES

GILMAN J. WINTHROP, M.D.
MOBILE, ALA.

Baer,[1] in 1906, called attention to certain cases characterized by pain over the plantar surface of the heel, due to a chronic inflammatory change, of gonorrheal origin, located in the flexor brevis digitorum muscle, with secondary new formation of bone or exostosis at the attachment of this muscle to the tubercle of the os calcis.

1. Baer: Surg. Gynec. and Obst., February, 1906.

Nobl,[2] of Vienna, had previously noted exostoses on the posterior surface of the os calcis, due, he thought, to inflammation of the sheath of the tendo Achillis, and suggested that they might, perhaps, be of gonorrheal origin, but this was not proved.

L. Jacquet[3] and Painer[4] also described exostoses on the posterior calcaneal surface, but were unable to determine the etiologic factor.

Ely[5] refers to a condition he names "gonorrheal foot," and states:

> It is characterized by extreme sensitiveness, usually in the soles. A history of a comparatively recent infection by the coccus of Neisser can be obtained, and the urethra will be found affected. These feet have something about them that immediately makes one suspicious, but further than the extreme sensitiveness and the fact that the patients walk as if they were treading on eggs, I can not tell exactly what it is. Even the pathology is a matter of doubt, for the condition is not one to justify an operation, and the diagnosis is a mere matter of empiricism.

It is quite possible that he refers to cases of gonorrheal exostosis, but he reports no skiagraphic or pathologic findings.

The paper of Baer,[1] I believe, first definitely describes and proves the gonorrheal origin of the condition he terms "gonorrheal exostosis of the os calcis."

Following the report of six cases by Baer, Jaeger,[6] in 1908, reported eleven others, and Davidson[7] adds the eighteenth case. I wish to add to this number the histories of two cases.

This affection is probably not uncommon, but the chief symptom, that of pain under the heel, is usually ascribed to some other condition—flat foot, tuberculosis, osteomyelitis or sarcoma of the bone, neuritis, bursitis, chronic rheumatism, rheumatoid arthritis, Schaffer's foot and the various other conditions associated with painful heel—and the close relation of an existing or previous gonorrhea is overlooked.

PATHOLOGY

Baer[1] believes that the initial process is located in the flexor brevis digitorum muscle and extends down to the os calcis. The chronic inflammatory process produces, first, exostotic growths at the attachment of the muscle to the tubercle of the os calcis and, secondarily, other bony growths may develop on the sides and posterior surface of the calcaneum or in the adjacent tendons. Jaeger states that "pathologically the process is an ossifying periostitis." Gonorrheal arthritis and exostoses between and along the vertebra may be coexistent. Baer demonstrated gonococci by culture in 1 and in sections in 2 of 4 cases examined. Jaeger reports positive findings of gonococci in one case. Cultures taken in Davidson's case proved to be sterile.

SYMPTOMS

1. Pain.—This, the chief symptom, is referred to the plantar surface of the os calcis, is very limited and present only when the patient bears weight on the foot or on direct pressure over the exostosis. Both feet are generally simultaneously affected. Usually there is no

2. Nobl: Fersenschmerz der Blennorrhoekranken, Ztschr. f. Heilk., xxiv, 273, quoted by Baer: Surg., Gynec. and Obst., February, 1906.
3. Jacquet: Ann. de dermat. et de syph., 1892, p. 681; quoted by Baer: Surg., Gynec. and Obst., February, 1906.
4. Painer: Tr. Am. Orthop. Assn., xi; quoted by Baer: Surg., Gynec. and Obst., February, 1906.
5. Ely: Rheumatism of the Feet, Med. Rec., Aug. 5, 1905.
6. Jaeger: Am. Jour. Orthop. Surg., January, 1908, v, No. 3.
7. Davidson: Med. Rec., Oct. 3, 1908.

pain on moving the foot, unless secondary osteophytes be present about the attachment of the tendo Achillis or mediotarsal joint. Pain about the ankle, knee or in the calf muscles may occasionally occur, because of strain on muscles or tendons from the unnatural gait of the patient.

2. Gait.—The extreme tenderness of the heel causes the patient to throw the body weight forward to the ball of the foot and gives a tiptoeing gait. His steps are slow and careful.

3. Deformity.—There is but little noticeable deformity. Periosteal thickening often produces a swelling on either side of the calcaneum. Occasionally very large exostoses may be felt on the bottom of the os calcis.

DIAGNOSIS

The complaint of pain in both heels and admission of an existing gleet or attack of acute urethritis some months previously, generally three to nine months, are suspicious. These, with the presence of the tender spot over the tubercle of the os calcis, absence of acute signs of inflammation and the gait should lead to an *x*-ray examination. Skiagraphs show a pointed or slightly bulbous bony growth springing from the tubercle of the os calcis and varying in size from "that of a pea to that of a marble." Occasionally there may be multiple exostoses. All the cases recorded have occurred in adult males. The exostoses are commonly bilateral.

TREATMENT

All measures save operative seem of little avail. Baer reports five patients operated on with cure. Jaeger obtained excellent results in six patients operated on. Davidson's patient was fully relieved by operation.

An incision is made along the inner side of the heel parallel to the plantar fascia, exposing the lower border of the os calcis. The tissues are retracted and the exostosis chiseled or curetted away. The wound is closed with silkworm gut without drainage. Baer also used in several cases a plantar incision directly over the exostosis. Jaeger also employed the plantar incision and introduced a cigarette drain for twenty-four hours. The lateral incision is probably the better, as it admits of clearer exposure and the resulting scar is not subjected to pressure as when located on the bottom of the heel. Drainage is unnecessary, as there is but little bleeding and the wounds heal by first intention.

CASE REPORTS

CASE 1.—*Patient.*—J. S., white man, aged 19, was admitted to Gouverneur Hospital,[8] New York, Sept. 11, 1907. Family history unimportant. Patient had measles and pertussis as a child. He was an electrician and was not subjected to an unusual amount of standing or walking.

Present Illness.—Patient had an attack of acute gonorrhea three months before admission, which was treated for several weeks. Three weeks before admission he noticed slight tenderness in both heels on walking. Tenderness had grown steadily worse and latterly in the evenings he had had some pain in ankle and running up to knee. The heels were never red or swollen and pain was noticed only on standing or walking.

Examination.—Patient was a rather poorly nourished man; general examination otherwise negative except for the presence of enlarged inguinal glands on both sides and for the tenderness under heels. On under surface of both heels there was marked tenderness over a very limited area. No swelling, redness or deformity was to be made out. Patient walked with great pain and threw his weight forward on to ball of foot, keeping heels free from the floor. Temperature, pulse and respiration were normal. Blood examination was normal; urine, normal except for presence of "clap shreds." Skiagraphs showed presence of exostoses on under surface of both ossa calcanei. Gonococci were determined in pus cells from the urine. The exostoses were, unfortunately, not examined for organisms.

Operation.—Ether. Right heel: Incision on inner side. Os calcis exposed and exostosis (½ inch long and ⅜ inch high) removed. Wound closed without drainage with silkworm gut. Left heel: Incision on plantar surface of heel; exostosis, about same size as in right foot, removed. Wound closed with silkworm gut. No drainage.

Postoperative History.—Wounds healed kindly and patient discharged November 28. All symptoms relieved. The pain in ankles and knees of which patient complained was evidently due to muscular strain produced by his abnormal gait in effort to relieve heels of pressure. This pain disappeared entirely after patient was kept in bed.

CASE 2.—*Patient.*—X, man, aged 20, was admitted to Gouverneur Hospital,[9] New York, April, 1908. Family and past history unimportant.

Present Illness.—Some nine months before admission the patient contracted an acute gonorrheal urethritis. He was treated with urethral injection until the acute symptoms abated, when treatment was discontinued. He noticed a slight mucoid discharge in the mornings for some time after stopping treatment. About four months before admission he felt slight tenderness in heels when he first walked in the morning but this gradually wore off during the day. Lately this tenderness had grown worse and persisted all day, seriously interfering with walking. He had been treated without improvement for flat foot and rheumatism.

Examination.—Patient was a fairly well-nourished young man. Thoracic and abdominal organs were normal. Prostate was slightly enlarged and firmer than normal. Inguinal glands, especially of left side, were enlarged. Urine showed gonorrheal shreds in first glass; second and third glasses clear. On plantar surface of both heels there was marked tenderness on pressure and walking was quite painful. No redness, swelling or deformity was noticed about heel; no pain on movement of foot. Gram-negative diplococci were determined in cells from urine. Skiagraphs showed a pointed bony growth springing from the tubercle of both ossa calcanei.

Patient was treated with hypodermic injections of gonorrheal antitoxin for three weeks but without improvement.

Operation.—May 4, 1908. Ether anesthesia. Right foot: Incision over inner side of right heel exposing exostosis, which was chiselled away. Wound closed with continuous catgut suture. No drainage. Left foot: Plantar incision over tubercle of os calcis. Exostosis, not so large as in right foot, was easily removed with rongeur forceps. Catgut closure and no drainage.

Postoperative History.—Wounds healed by first intention. Patient discharged on twentieth day after operation. Very slight tenderness persists under left foot, probably because of scar.

204 Conti Street.

8. I am indebted to Dr. H. M. Silver, visiting surgeon to the Gouverneur Hospital for permission to publish this case.

9. I desire to thank Dr. Edward L. Kellogg of New York City for permission to report this case.

HAIR SICKNESS

H. F. GILLETTE, M.D.
CUBA, N. Y.

I wish to call the attention of those who are interested in the various phases of serotherapy to a disease which affects workmen in hair-cleaning mills. The hair from various animals is received at the mills in bales which are opened and the hair is put into machines which separate the hair from dust and other foreign material, and the workmen necessarily inhale much of this dust which, in part, is the dried secretion of the sudorific glands of the animals from which the hair came.

The workmen recognize a disease, or reaction which they call "hair sickness," which comes on from 3 to 5 days from the time a new workman is first exposed to the dust. The sickness is characterized by a severe chill which comes on in seeming health, and a fever which may reach 103 to 104 F. The patient experiences severe pains in the head, back and extremities, and has nausea and vomiting. He usually is confined to the bed for a week or more. When he recovers he is immune to the disease so long as he continues to work about the hair, but if he leaves the mill for a year or two his immunity ceases and he experiences the reaction again if he resumes work about the hair. The mill hands claim that hair which has been removed by clipping machines from live horses is more toxic, and that the reaction comes on earlier and is more severe than that of other animals.

Workmen who are subject to asthma, or who look for a return of hay-fever on a certain date, are quite sure to be free from the asthma and hay-fever while working about the hair, but the immunity ceases after a time if they leave the mill and enter other work. Horse serum is used in the human subject because its effects are milder than the serums from other animals, yet if the observations of workmen are correct the dust from the horse is more toxic than that from other animals. One explanation of the seemingly increased toxemia from the dust from horse hair is that it comes usually direct from the clippers and with all the dust retained, while the cow hair which is received has been passed through a tanning process which washes out the dust.

It is possible that something on this subject has been reported, but I am not able to find any reference to the reaction or toxemia described.

[EDITOR'S COMMENT.—This interesting account of what seems to be a special "trade disease" suggests the possibility that the symptoms described may be due to an infection rather than to an intoxication by any constituent of the hair. The sharp rise in temperature, the chill, and the general symptomatology are distinctly more in harmony with the course of an infection than with any intoxication with substances of animal origin. This possibility is made more plausible by the statement that the hair from hides that have been tanned seem less toxic than that derived from living animals. The process of tanning would naturally destroy the bacteria. Cultures from the blood might throw light on the etiology of the disease, which is assuredly well worthy of investigation.]

USE OF APPENDIX TO SPLICE THE URETER

HARVEY P. JACK, M.D.
CANISTEO, N. Y.

During some recent operations in the pelvis, in which the ureter was bared during the dissection, it occurred to me to see if it would be possible to use a healthy appendix to splice the defect caused by any injury of the ureter or by the involvement of an inch or two of it in cancerous disease, requiring the sacrifice of that portion. I found that I could bring the appendix over this place in the ureter without traction on its mesentery. Since these operations, whenever I have opened the abdomen either for removal of the appendix or for any other operation, I have attempted to ascertain if it were possible to bring the appendix over the ureter. My investigations have confirmed my opinion that it would be possible in a right-sided injury of the ureter to splice the defect with a healthy appendix. So far as I know this is an original idea.

PELLAGRA IN ARKANSAS

O. L. WILLIAMSON, M.D.
MARIANNA, ARK.

The following case came under my care July 28, 1909:

Patient.—Virginia C., negro woman, aged 23, field hand, married, has child 4 months old. Family history negative. Patient has had attacks of malaria; no syphilis; has always used corn-bread in preference to other breads.

Present Illness.—This began about May 20, 1909, with "sore mouth." Patient had considerable difficulty in eating on account of pain. About June 1 a skin lesion appeared on the proximal side of the palm of the right hand. This was followed in about a week by a similar lesion on the dorsal surface of the left hand. These lesions increased rapidly in area. They were thought to be due to burns, although patient could not remember having burned herself. The lips soon became affected with a moist lesion. Patient began losing flesh rapidly but continued to work in the fields. About July 10 diarrhea began. The stools contained blood and mucus but were not accompanied with tenesmus. She had no nourishment for the baby after July 14. Nausea and vomiting began July 25.

Examination.—On July 28 I found patient weak and emaciated. The dorsal surfaces of both hands were covered with a dark lesion that appeared somewhat like an old burn. The skin was thickened, rough, and very black in places. Portions of the surfaces were covered with crusts while others were entirely raw. The condition was exaggerated on the knuckles and between the fingers. There was some pus between the fingers. The palms were also affected but the lesions there were drier and there was considerable exfoliation. There were no raw surfaces on the palms. Both hands were slightly swollen. The affected areas were symmetrical in size, shape and position and extended from the tips of the fingers to about the juncture of the lower and middle thirds of the forearms. There were painful exfoliating areas on the lips. The tongue was red, smooth and painful. Stomatitis was evident. The temperature was 101 2/5, pulse 150, respiration 20; heart rapid but otherwise normal; lungs, liver and spleen normal; abdomen slightly tympanitic and tender. The skin of the abdomen appeared somewhat like that on the doral surfaces of the hands, being thick, rough and abnormally dark. The pupils were equal and reacted to light and accommodation. There was slight decrease in tactile sense over affected areas. The knee-jerk was normal on the right side but decreased on the left. There was no ankle clonus and nothing abnormal about the gait. The patient's mind was clear and she had neither headache nor vertigo. She complained of being tired, weak and thirsty; had pain in back of neck and itching of affected parts. She was restless at night and had had chills the past three nights; was still suffering from nausea, vomiting, loss of appetite and diarrhea. She had lost thirty pounds since June 10 and had become too weak to sit up long at the time. The urine contained neither albumin, casts nor sugar, the only abnormality being an increase of indican.

Examination of Blood: Hemoglobin, 95 to 100 per cent.; prolonged search revealed one estivoautumnal parasite. Polychromatophiles and macrocytes present; blood platelets decreased. Differential leucocyte count: small mononuclears, 23 per cent.; large mononuclears, 15.3 per cent.; polynuclears, 59.2 per cent.; eosinophiles, 2.4 per cent.

PAROXYSMAL TACHYCARDIA ASSOCIATED WITH ANGINAL SYMPTOMS

T. WERTZ, M.D.
PRINCETON, IND.

This condition began in my own person about six years ago, first with the loss of a heart-beat about every five to twenty beats, more particularly after meals and after exercise. There was little or no discomfort from the irregularity. Repeated examination of the heart by experts failed to discover any heart lesions. This condi-

tion continued for a period of about four years without any apparent increase in the irregularity and no other subjective symptoms.

ANGINA APPEARS

About two years ago anginal symptoms with tachycardia first made their appearance. At first the pain about the heart radiated into the left shoulder, and in a short time subsequent into both shoulders. This rapid heart and pain was always brought on by walking at my usual pace for a distance of two or three blocks, and at these times the heart would be very irregular. As time went on these paroxysms were excited by walking, by any sudden movement or mental excitement. At the height of this trouble night attacks occurred some time after retiring for two or three times at intervals of several weeks. These night attacks would last half an hour or more, the heart beating very rapidly—four or five times faster than normal. The attacks brought on by exercise usually quieted down after five or ten minutes of rest. With these paroxysms the heart irregularity was very great, losing a beat every three or four pulsations. After this condition had lasted about a year it began slowly to abate in severity so that now after two years the irregularity and pain about the heart is very much less.

Exercise immediately after a meal will set the heart to going; but an hour or more after the meals I can walk at a moderate pace for a mile or more with little discomfort. I feel perfectly well and comfortable when at rest bodily and mentally, with usually little or no irregularity of the heart and about 70 beats a minute. But this cardiac quietude is easily disturbed. In the morning hours before rising or with some mental emotion there will be a sudden jump of the heart beat to many times the normal. This unsteadiness seems to be associated with the congestion of the brain from the long recumbent position. Every morning this rapid heart action is a prominent factor while dressing. In the last six months a soft systolic initial murmur has developed without any other apparent heart lesion. All other bodily functions are normal and well performed. I am six feet tall, weigh two hundred pounds, am past 60 years of age and have always heretofore enjoyed good health and come of a long-lived family.

I have tried many forms of treatment with drugs, but without any apparent benefit, except during the first year of the severe symptoms. These were held in check or slightly modified by nitroglycerin pellets if taken before walking. For the last year all drugs have been abandoned. A daily morning cold tub bath will relieve the restlessness and steady the heart.

In addition to this I have discovered that the rapid heart can be instantly brought to the normal rhythm by grasping both carotids with the thumb and forefinger and compressing them against the larynx or trachea. The instant this compression is made the heart makes a single vigorous impulse and at once resumes its normal rhythm. This has been a great boon to me for the last year, as the galloping heart can at once be brought under subjection. The vagi seem to have lost control of the heart's action and this organ is like an engine without a governor. The compression of the carotids increases the blood pressure in the heart which, perhaps, through a better nutrition, steadies the cardiac ganglia. What the exact condition is and just how this compression of the carotids acts beyond increasing the blood pressure I am not prepared to say. But so far as my own case is concerned it has robbed this terrible condition of its sting. I place this statement on record hoping it may be of equal service to others in like conditions.

A CASE OF APPENDICITIS OF TWENTY YEARS' STANDING *

J. H. CARSTENS, M.D.
DETROIT

Clinical History.—Reported by Dr. F. E. Bowman. The patient, Mrs. E. W., aged 60, appears well nourished and robust. Her trouble, which began about the age of 40, was diagnosed as peritonitis and in about five months terminated in an abdominal abscess in the region of McBurney's point, which was lanced. It remained open for about three weeks. After this the right thigh was flexed on the abdomen for about eighteen months. For about eight years thereafter the patient's health was good. Then she fell from a hammock and injured her right hip. One week later an abscess appeared at the site of injury. Almost immediately after the fall, pain was experienced again at McBurney's point. The patient connected this pain with the abscess opening on the hip. In about three weeks she was about her housework in fair health.

After that time there were from one to three recurrences of the abscess openings on the hip, which healed in from three weeks to three months. About ten or twelve years ago she had an operation for appendicitis. The surgeon opened the abdomen at right iliac region and reported that "appendix

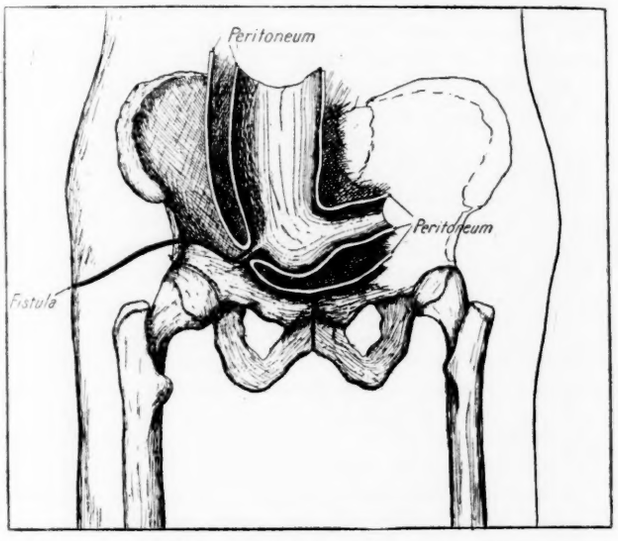

Diagram showing structures involved in an unusual course of an appendiceal abscess.

had sloughed off." He likewise made a long incision on the hip at the site of the abscess opening. Recovery did not take place until ten months later. During convalescence repeated incisions were made on the hip and two on the abdomen, tubes being inserted in both abdominal and hip wounds. A tube was retained in the posterior wound for three years. This brings the history up to some seven years ago. Then for three years abscesses formed from one to three a year. Poultices were applied and the lance used in every instance. For the past four years no abscess formed and the wounds closed. An abdominal hernia developed at the old abdominal incision in the meantime. In September, 1907, another abscess formed, which was opened. It drained freely at times; then would close to reopen in four or five days. In this condition the patient consulted Dr. J. H. Carstens on Dec. 7, 1907.

Operation (December 10).—An incision was made over the hernia. The cecum was adherent to the right iliac fossa and was with difficulty brought to view. A stump of the appendix, about three-fourths of an inch long, was still thoroughly adherent all around to the posterior peritoneum, but the center had passed through the peritoneum and opened behind the peritoneum into the fascia and muscles found in this locality. From there started an opening back of the peri-

*Read at Northern Tri-State Medical Association, Toledo, July 13, 1909.

toneum upward, passing over the ilium and then passing downwards around the hip joint, opening just back of the great trochanter. The remnant of the appendix was loosened from its adhesions. The peritoneum was stripped back, making a cuff to the cecum, the small stump of the appendix cut off, and the hole in the cecum closed with fine catgut. First, the muscles and mucous membrane were carefully brought together, the cuff of the peritoneum also sewed and all this amplified by Lembert's suture. A small rubber drainage-tube was then inserted in that posterior opening up to the crest of the ilium and then downward to the skin opening. The tube reached just up to the peritoneum, but not into it. The hole in the posterior peritoneum where the appendix had been was now carefully closed in a similar way to hole in the cecum and amplified with Lembert's suture. The peritoneal cavity was closed. I then resected the muscles where the hernia was, in the flap-splitting manner, put them well together with catgut, and closed the rest of the incision and skin without drainage.

Postoperative History.—The patient made an ideal recovery. The rubber tube at the external opening was gradually withdrawn and in twelve days everything had healed perfectly. The patient has remained in good condition since that time.

Analysis of the case now with a better understanding shows that the appendix (probably two-thirds of it) reached back of the peritoneum originally. I described such cases ten years ago.[1] This part back of the peritoneum became inflamed and suppurated and sloughed off, the pus burrowing, and finally the abscess opened just in front of the crest of the ilium. Later on it burrowed downward and opened near Poupart's ligament, as shown in the schematic sketch I have made.

1. New York Med. Jour., Aug. 12, 1899.

The adhesions and cicatrices offered more resistance than the loose cellular tissue in the iliac fossa; hence thereafter the burrowing continued over the ilium, then downward around the hip joint, and the abscess would open there. It was, indeed, a puzzling case. Any one looking at the different scars now would naturally make the diagnosis of a former hip-joint disease. A number of times the woman had been apparently well. Everything had healed, but as the result of injury or some trouble with the bowels the valve at the junction of the appendix with the cecum finally opened up. Now fecal and septic matter would get into the little stump of the appendix, and as the end was open (or only covered by the loose muscles and fascia found in the iliac fossa) it burrowed in the direction of least resistance.

As the more resisting peritoneum covered the stump the pus fortunately did not break into the peritoneal cavity and thus the woman's life was saved. Her wonderful power of resistance carried her through all, although she was suffering virtually for twenty years with a suppurating appendix.

620 Woodward Avenue.

Therapeutics

OPHTHALMIA NEONATORUM

While the treatment of this serious inflammation is generally rightly referred to the oculist, it may occur in little patients whom it is impossible to bring under the specialist's care. Also, the prevention of this inflammation of the eye is of national importance, and should be understood and carried out by every practitioner who takes charge of obstetrical cases.

Dr. Julien A. Gehrung, New York (*New York State Journal of Medicine*, May, 1909), offers good advice for the prevention and treatment of this serious inflammation.

As soon as the child is born and after thoroughly cleansing the eyes, he advises the instillation of a drop of a 1 per cent. nitrate of silver solution. While Credé advised the use of a 2 per cent. solution, Gehrung thinks the 1 per cent. is of sufficient strength. After the child has been washed and dressed and the nurse's hands have been cleansed, he advises the instillation of another drop of the 1 per cent. solution into each eye, and this may be followed by a little physiologic saline solution or a drop of adrenalin chlorid solution (1 to 5,000). This "stops the pain and neutralizes the further action of the silver."

Gehrung believes that this prophylactic treatment is efficient and as satisfactory as can be obtained from any silver preparation.

If in spite of such prophylactic treatment (and he emphasizes the necessity of cleanliness as being next to godliness, both in the care of the child and in the nurse's care of her own hands) the conjunctivæ become inflamed, he advises the use of cold boric acid solution (if the cornea is not involved) and careful cleansing of the pockets of the conjunctivæ. The lid of the eye is gently raised, all pressure being avoided, and the tip of a soft rubber bulb syringe is inserted under the upper lid. Slowly and gently the eye is irrigated with the cold boric acid solution to wash out all purulent matter. "This should be done every fifteen minutes, or oftener if the discharge is profuse."

He next advises the instillation of a 4 per cent. solution of cocain and adrenalin chlorid (1 to 5,000) for its anesthetic effect and to cause contraction of the blood vessels.

The cornea should be carefully watched, and to inspect it properly, if necessary, a lid elevator should be used. If the cornea is involved, hot applications and atropin drops are indicated.

If but one eye is involved, the greatest care should be exercised to prevent infection of the other eye.

Once a day during the inflammation Gehrung applies a 1 per cent. nitrate of silver solution as follows: "Raise the lid slightly, and with a cotton swab saturated with the silver solution gently brush (raising the upper eyelid on the swab) the whole conjunctiva, both upper and lower, being careful to treat the cul-de-sacs thoroughly. Such treatment breaks up all adhesions, opens pockets of pus, and enables the medicament to reach all parts." If bleeding is caused, it does good rather than harm.

The point of the swab should be thoroughly protected by folding cotton over it so that it can not injure the membrane. To apply the above treatment it is not necessary to evert the swollen, painful lids; simple elevation of the upper lid by the retractor is sufficient.

If the disease is severe, Gehrung uses instillations, every one or two hours, of a strong, even up to 50 per cent., argyrol solution, but does not believe this alone is satisfactory, and reinforces it by one daily application of a 1 per cent. solution of nitrate of silver. He thinks the nitrate of silver kills the germs that cause the inflammation.

He believes that ice compresses are of value, applied from ten to twenty minutes every two hours, or, if possible, more frequently, "according to the vitality of the child," but if the cornea is involved, as above stated, hot applications must be used.

Proper nutrition, preferably mother's milk, and proper hygiene are important factors in aiding quick recovery from this serious inflammation.

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[*For other information see second page following reading matter*]

SATURDAY, AUGUST 28, 1909

OLIVER WENDELL HOLMES

To-morrow, August 29, 1909, marks the hundredth anniversary of the birth of one whose name is probably more widely known than that of any other American physician. We refer to Oliver Wendell Holmes. The fact that the year 1809 saw the birth of four men of such varied genius as Gladstone, Tennyson, Darwin and Holmes has been frequently remarked. Dr. Holmes himself spoke of this circumstance in his "Hundred Days in Europe" in the following words: "It seems like an honor to have come into the world in such company, but it is more likely to provoke humility than vanity in a common mortal to find himself coeval with such illustrious personages"—a remark thoroughly characteristic of his breadth of spirit and not at all incompatible with the genial egotism appearing in many of his informal passages. The name of Dr. Holmes holds rather an unusual position in the annals of medicine and literature. There are great physicians who produced contributions to general literature, like Haller and Werlhof; and there are great writers who received a medical education, like Goldsmith and Keats; but the world has forgotten the literature of the former and the medicine of the latter. Dr. Holmes, however, belongs, with Sir Thomas Browne and "Rab's friend," to that small group who must be remembered both as devoted physicians and as lovable authors, because their writings are charged with personality, and the experience of their profession went to the upbuilding of that personality.

Moreover, while Dr. Holmes' lasting contributions to medicine are few, that he held a position of real influence in the medical thought of his day can not be doubted, as may be seen in the famous controversy concerning the contagiousness of puerperal fever. For forty years he was professor of anatomy at Harvard, keeping abreast of the progress of science to the end with all the enthusiasm of a young man; and yet he was the author of the exquisite lines of "The Chambered Nautilus." In this versatility, whose expression brought distinction in such widely varying fields, lies the most remarkable characteristic of his remarkable career.

It is perhaps of the genial "Autocrat" that we most often think when we hear the name of Oliver Wendell Holmes. The delightful humor and good sense of his philosophizings, his broad sympathy and charity toward all men, and his inexhaustible fund of anecdote and illustration have endeared him to us all, so that we turn back again and again to his "Breakfast Table" series to be cheered by his wit and to learn something of his fine charity.

The peculiar affection in which Dr. Holmes is held in medical circles is perhaps best explained by the fulness with which his life expressed the spirit that sang:

> A triple health to Friendship, Science, Art,
> From heads and hands that own a common heart!

THE FLY AND TYPHOID FEVER

The fly has from time immemorial been endured as a necessary scavenger. This it is, but a scavenger necessary only to those unaccustomed to reasonable and adequate cleanliness. While on the one hand the fly removes putrefying substances, on the other it distributes material at least as pathogenic—much tuberculous material, the virus of cholera, of tetanus, of trachoma, and of anthrax. It is certainly more than a coincidence that infant mortality is greatest in fly time. Milk is a very fair culture medium for bacteria, and amidst the uncleanliness obtaining in many families among the poor, it easily becomes contaminated with the excreta of flies and with the germs clinging to their feet. One fly was found thus to be the host for a hundred thousand fecal bacteria; "and it was on its way to the nearest milk pitcher." It is now generally agreed that the dysenteries and the diarrheas (except in the rare cases induced mechanically or nervously) are of microbic origin. Here the fly is surely implicated; especially since breast-fed infants almost never suffer the intestinal disorders which are deplorably frequent among the bottle-fed.

It is becoming manifest that the fly stands in a causative relation to typhoid fever. We have been accustomed to speak of typhoid as the autumnal fever. Counting back two months from the fall rise in typhoid mortality to the beginning of the fortnight's incubation, we come on the curve of prevalence of flies; the curve of high temperature most conducive to fly-breeding and activity; and also that of prevalence of diarrheal disease in both infant and adult. The time, then, when the fly is most active and numerous corresponds notably with the time when typhoid fever is contracted with unusual frequency. Many persons have come down with typhoid on returning to the city from their vacations, and tainted wells have generally been blamed; whereas, possibly in some cases the well has not been so blameworthy as the bluebottle.

The *Musca domestica* has not inaptly been termed the typhoid fly. Of course there are other means of contracting the disease than through this insect; but that it is a formidable agent can not be doubted. Its breeding-places are in the manure and refuse in and about stables; in the excrement of animals and human beings; in dust from dried urine and feces, and the

discharges of "typhoid carriers;" in decaying vegetable matter, especially when congenial warmth and moisture coexist. Two hundred larvæ have been found in one inch of manure; ten days will suffice for the development of a brood; fifteen broods a season are possible; twelve flies surviving a winter may reproduce 40,000 during the following warm season. The fly's life is usually but a few weeks; but it may live dormant through the winter in closets and the warm parts of houses[1].

Felt [2]has found that this insect does not as a rule travel beyond three hundred to five hundred feet from its breeding-place; its habitat may indeed be close at hand—in spittoons, under the table, behind doors. It is, then, the part of wisdom to keep these insects from the sick-room, especially in contagious cases; to screen all doors and windows, especially in kitchen and dining-room; to cover or screen all food, particularly such as is uncooked, not only in homes, but also in hotels, provision stores and markets. Decaying material should not accumulate in or near a dwelling; fermentable refuse—bedding straw, waste paper, etc., which can not be burned or otherwise destroyed, should be covered with lime or kerosene oil; a modern sewage system, not leaking and not exposed, should be maintained; plumbing should be sanitary, filtration effective; kerosene should be poured into drains. Nuisances should be at once reported to health departments. Where there is no dirt and no filth there will be no flies. It is suggested[3] that the best and simplest fly-killer is a weak solution of formaldehyd in water (two drams to the pint); this should be put in saucers throughout the dwelling. Pyrethrum powder burned is also destructive of flies.

The typhoid bacillus may be carried from open drains, vaults and cesspools by flies, and then deposited by them on food and water; or the infection may be conveyed from open or box privies through underground drainage into wells, streams, small lakes and reservoirs visited by flies. Howard[4] would have large metal vessels used in rural districts; the excreta should be covered with earth, and the vessel should be emptied daily in a place where it is certain the drainage would not be dangerous. Manure should be put into tight pits or vaults without wire screens (which would be corroded by disinfectants); there should be an outer door from which the manure can be shoveled away. A barrel of chlorid of lime should be constantly at hand, from which each deposit of manure should be sprinkled.

Thus the breeding of flies may be prevented, but undoubtedly will not be until something like the same effort has been made to arouse public sentiment against the fly as against the mosquito. When by iteration and reiteration the chain of cause and effect that connects refuse, flies, and disease shall have become known to every one; when the housewife shall feel as much horror at finding a swarm of flies at her back door as she now feels at finding one in the parlor—then, perhaps, the day may come when scavenger flies will be as unknown in any self-respecting community as are now such scavenger dogs as those which constitute the street-cleaning force of Constantinople. Even if the extermination of the fly should not mean as much with relation to any one disease as the extermination of the anopheles has meant for malaria or the extinction of the calopus for yellow fever, in view of the number and variety of germs for which the fly is host, it is certain to mean an immense gain in general health.

1. Coward, F. A.: The Common House-Fly, THE JOURNAL A. M. A., June 5, 1909, li, 1871.
2. Felt, E. P.: The Control of Household Insects, Bull. New York State Education Dept.
3. The Merchants' Association Committee on Pollution of the Waters of New York; Rules for Dealing with the Fly Nuisance.
4. Howard, L. O.: House-Flies, U. S. Dept. of Agriculture, Bureau of Animal Industry.

THE TREATMENT OF NOCTURNAL ENURESIS WITH THYROID EXTRACT

Many causes have been assigned for the wetting of the bed at night by young and older children, but they have not led to any uniformly successful plan of treatment. In some instances, no doubt, the disorder may be traced to defective training, with the development of a vicious habit, but in many both provocative factor and remedial measure alike elude discovery. That the phenomenon may be due to some abnormality of internal secretion would appear to be shown by the interesting and instructive experience of Dr. Leonard Williams,[1] who records a series of 25 cases in which relief was afforded by the administration of small doses of thyroid extract. The suggestion was obtained from the case of a boy with nocturnal enuresis who instead of improving on removal of adenoids and tonsils became worse. Reasoning that the operation had deprived the child of a corrective internal secretion, Williams was led, on account of the intimate relations between the thyroid gland and the lymph glands, to try the therapeutic effect of thyroid extract. To use Dr. Williams' own words, "the effect was most dramatic." The enuresis ceased immediately and never recurred. Observations of a similar character had been previously made by a Belgian writer, Dr. Hertoghe, of Antwerp. It is important that the dose of thyroid extract employed be small—from ½ grain to 2½ grains thrice daily—as larger doses may defeat the purpose of the treatment, as was illustrated in one case in which enuresis previously absent developed in a boy to whom 2½ grains of thyroid extract were administered thrice daily for the correction of general debility following an attack of nephritis. The initial dose should be small, and it should be increased only if necessary, but no more should be administered than the minimum sufficient to effect the desired result. From the foregoing experiences it is argued that the thyroid secretion is a regulator of the action of the bladder and its sphincter, an excess being almost if not quite as deleterious as a deficiency.

1. Lancet, May 1, 1909, p. 1245.

SLEEPING SICKNESS

Sir Henry Hesketh Bell, Governor of the Uganda Protectorate, claims to have sleeping sickness under control in the region under his supervision. This feat was not accomplished, however, by any successful medical treatment. Professor Koch's work seems to have been unavailing, so far as finding any really curative method against the disease. The success was obtained by the most drastic measures. For several hundred miles along the shore of Lake Victoria, a strip two miles in width has been depopulated by order and the inhabitants removed inland. This was done by cooperation with the native chiefs, and the only people who remain within reach of the *Glossina* carrying the disease are the dwellers on a few islands from which it was not practicable to remove them. The mortality, which had ranged from 20,000 to 30,000 a year in the protectorate, fell during 1908 to less than 2,000, and the deaths occur now almost exclusively in the segregation camps; and it is believed that the new cases of infection are very few. The ultimate good result which is hoped for is that in a comparatively short time the disease will disappear from lack of sources of infection. Such a measure could only be carried out successfully with a docile population living under almost absolute authority, and constant vigilance will be required hereafter to hold the ground gained in the contest against the disease. It is not likely that so extensive a tract along the border of a navigable lake, the largest in Africa, can remain always unutilized, and the investigations into the cause and cure of sleeping sickness, the finding of the host of the protozoon, will have to be continued until some conclusive and valuable results are obtained. The sleeping sickness does not appear to exist along the shores of other African lakes, at least not to any such extent as has been the case in Uganda, which is an encouraging fact so far as the prospect of the complete success of Sir Henry Hesketh Bell's methods is concerned. Thus far certainly the outlook is encouraging.

ACUTE RHEUMATISM

Acute articular rheumatism or rheumatic fever was first described in the middle of the eighteenth century by Boerhaave, who was himself a sufferer from the disease. His description was subsequently elaborated by one of his pupils, van Swieten, in his commentaries on the aphorisms of his distinguished master. Sydenham was one of the earliest observers to recognize the affection, and he has given a most admirable account of it. For a long time the disorder was attributed to changes in the chemical constitution of the blood, but modern investigation appears to have demonstrated conclusively its bacterial origin. It is true that there are many forms of arthritis, whether affecting a single joint or many joints, and due to divers causes, but among these true rheumatism stands out as an acute specific, apparently self-limited disease, with well-defined clinical and pathologic characteristics. According to the view of Dr. Norman Moore,[1] who discusses the subject at considerable length in the Lumleian Lectures, the cardinal features of rheumatic fever are endocarditis and arthritis. The former he believes to be always present, in most instances causing permanent damage to one or more valves. He goes so far as to express the opinion that any disease attended with arthritis, but not with evidences of endocarditis, is not rheumatic fever. Accordingly, he proposes the term "heart fever" as the most appropriate designation for the disease. There may be in addition pericarditis or pleurisy. The distinguishing feature of the arthritis, as differentiated from other forms of joint inflammation, is the fact that complete recovery always ensues. The temperature curve is characterized by an initial rise, followed after a decline by occasional elevations, with intervals of normal temperature. Acute rheumatism is to be distinguished especially from ulcerative endocarditis and gonococcal arthritis. In cases of ulcerative endocarditis the joints usually escape, the temperature is high and oscillating, the disease is of protracted duration and recovery is rare. In cases of gonococcal arthritis evidences of endocarditis are generally wanting, while the lesions of the joints almost always leave permanent injury behind. Rheumatic fever, according to Moore, has an indefinite and variable duration, from two months to ten years or more, in accordance with the course of the attending endocarditis and the survival of the causative micro-organisms. Treatment consists mainly in protracted rest and the administration of some form of salicylic acid.

1. Lancet, April 24, May 1, 8, 1909.

Medical News

CALIFORNIA

Personal.—Dr. and Mrs. Peter A. Jordan, San Jose, have returned from Europe.——Dr. Antoinette M. Bennette, San Bernardino, has been appointed resident physician and superintendent of nurses at the county hospital.——Dr. Thomas G. Hesser, Folsom, was operated on for appendicitis at Wentworth Hospital, Sacramento, July 28.

Sanatorium Dedicated.—The White Crusaders' Sanatorium for the Treatment of Patients Afflicted with Incipient Tuberculosis was dedicated July 16, at Alta. The site consists of 90 acres of wooded hillsides at an altitude of 3,600 feet, about one mile from Alta. The colony consists of eight buildings, grouped about the central sanatorium. In this building will be the dining-room, kitchen and general assembly room, and home of the resident physician. The sanatorium will accommodate thirty patients.

ILLINOIS

Chicago

Personal.—Dr. S. Josephine McCollum, recent medical superintendent and for ten years anesthetist at Mary Thompson Hospital, has withdrawn, entered private practice, and will make anesthetics a specialty.

KENTUCKY

Proclamation.—The State Board of Health has issued a proclamation setting forth that 39.1 per cent. of 119 samples of specimens of milk supplied to the city of Louisville examined are tubercular; showing that infectious and contagious diseases exist among cows producing milk for sale in Kentucky; announcing the existence of infectious and contagious diseases in the counties of the state, and giving rules for the prevention of the spread of these diseases and the protection of the health of the state. These rules provide that persons owning or controlling cows shall submit such cows to the tuberculin test; that no milk shall be sold in the state unless the cows producing same show a negative reaction to tuberculin; that all cows found to be infected with tuberculosis shall be destroyed at the cost of the owner; that all local boards through the state, the inspectors of the Bureau of Animal Industry of the

United States, and officers of the commonwealth shall cooperate with the officers of this board in this regard; that no cows such as are brought for immediate slaughter shall be allowed to enter the state unless they have shown negative reaction to tuberculin and have been inspected by the officers of the board.

MARYLAND

Hospital News.—The Polyclinic Dispensary will be opened in a short time on East Baltimore street. Dr. Leonard K. Hirshberg is chief of clinic and Drs. Newdigate M. Owensby, Claude A. Stonecipher, E. G. Linthicum, George W. DeHoff, Samuel Kahn, Henry H. Flood and Thomas H. Magness are his associates.——The Board of Estimates has appropriated $137,000 for improvements at Bayview Hospital. A wing will be erected to cost $87,000, making room for 150 additional beds, which will allow all patients to be in the hospital and empty the tunnel. This will also separate the insane from the indigent inmates.

Personal.—Dr. William K. White underwent an operation at University Hospital, August 5.——Dr. James M. H. Rowland has been elected chairman of the Democratic Advisory Committee of 120, which was appointed by the Democratic State Central Committee to manage the campaign next fall.——Dr. Percy Millard Dawson, associate professor of physiology in Johns Hopkins Medical School, has resigned.——Dr. Anton Dilger of the faculty of Heidelberg University is inspecting the hospitals of Baltimore.——Dr. Aristide Giampietro has been appointed physiologist in the Bureau of Plant Industries of the United States Department of Agriculture.

Baltimore

Personal.—Dr. Theodore Cooke, Jr., has been elected president of the National Prison Physician's Association which met recently in Seattle.——Dr. John Doyle, a resident physician at Mercy Hospital, was operated on for appendicitis in that institution, August 20.——Dr. William Henry Smith suffered a fracture of the fibula in a game of ball between the resident physicians and non-resident physicians of University Hospital, August 20.——Dr. Walter V. S. Levy, pathologist to University Hospital, has accepted a similar appointment to the Freedman's Hospital, Washington, D. C.——Dr. Matthew James McKinnon, of York, Pa., one of the oldest graduates of the University of Maryland, while on a visit to his daughter near Baltimore, was seized with a critical illness of the stomach.

MINNESOTA

New Hospital.—Drs. Archa E. Wilcox, Charles G. Weston and John Warren Little have had plans drawn for a hospital at Harriet and Franklin avenues, Minneapolis, to accommodate thirty-four patients.

Personal.—Dr. Edward W. Buckley, St. Paul, has been elected national physician of the Knights of Columbus.——Dr. Herbert O. Collins has been elected city physician of Minneapolis.——Dr. Wilcox has been appointed a member of the standing committee to take care of the Hopewell Hospital.

County Society Meeting.—The forty-first annual session of Wabasha County Medical Society was held at Wabasha, July 8, when Dr. Henry T. McGuigan, Mazeppa, was elected president; Dr. Joseph F. Bond, Wabasha, vice-president; Dr. William F. Wilson, Lake City, secretary and treasurer; Dr. Jesse A. Slocumb, Plainview, delegate to the state association; Dr. John P. Dougherty, Wabasha, alternate, and Dr. D. P. Dempsey, Kellogg, censor.

MONTANA

Smallpox Quarantine Abolished.—At a meeting of the State Board of Health, July 10, resolutions were adopted abolishing quarantine regulation of smallpox for the following reasons: Vaccination, properly performed and repeated at intervals, is an absolute preventative. The care of cases is a heavy expense on the counties. Properly vaccinated persons can not become a care on the counties.

Medical Board's Decision Affirmed.—A jury composed of Drs. Napoleon J. Salvail, Louis H. Fligman, Charles S. W. Thompson, all of Helena; McCabe, Oscar M. Lanstrum, Helena, and Max Barbour, heard an appeal in the District Court in the matter of the application of W. R. Smith, Roundup, to the State Board of Medical Examiners, for a certificate to practice. The jury returned a verdict sustaining the board and finding the defendant was not entitled to practice medicine in the state.

NEVADA

Hospital News.—At the meeting of the Goldfield Mine Owners' Association, Dr. Eugene A. Wheeler, formerly in charge of the Miners' Union Hospital, was selected to take charge of St. Mary's Hospital, succeeding Drs. D. Ashley Turner and Ora Burton Dunham.

New Laboratory.—Under the law creating a State Hygienic Laboratory at the University of Nevada and providing a bacteriologist for the diagnosis of infectious diseases for the physicians and health officers of the state and for research into the natural causes and control of such diseases, Dr. W. B. Mack has been appointed director of the laboratory.

Personal.—Dr. Francis C. Pache, Mina, was recently operated on in San Francisco for appendicitis.——Drs. Archibald L. Rice, Mack and John A. Lewis have been appointed members of the Board of Health of Reno.

NEW JERSEY

July Mortality.—During the month ended July 15, there were 2,606 deaths reported to the Bureau of Vital Statistics. It is noticeable that there is a decrease in the deaths from infantile diarrhea, measles, scarlet fever and diphtheria; cancer, infantile diarrhea, measles, scarlet fever and diphtheria, but an increase in cancer, cerebrospinal meningitis and nephritis.

Personal.—Dr. George H. Baker, Long Branch, is critically ill with cerebral hemorrhage.——Dr. Richard C. Barrington, Mount Holly, has succeeded Dr. J. W. Branin as a member and secretary of the State Board of Medical Examiners.——Dr. William F. Ridgway has succeeded Dr. J. Addison Joy as chief of the medical staff of the Atlantic City Hospital, and Dr. Samuel Barbash has been appointed chief of the dispensary work.

NEW YORK

New York City

Post-Graduate Hospital Acquires Property.—The New York Post-Graduate Hospital is to erect an annex to the hospital on property recently purchased by them for that purpose on Twentieth and Twenty-first streets.

Personal.—Dr. and Mrs. George L. Brodhead, Dr. and Mrs. Ferdinand C. Valentine, and Drs. Arthur S. Vosburgh, Charles S. Barnes, and Fred H. Albee have sailed for Europe.——Dr. Gordon Lindsay was recently assaulted and robbed of $200 on Twenty-sixth street and Second avenue.

OHIO

License Is Revoked.—The State Medical Board is said to have revoked the license of Dr. James M. Earnest, Alliance, June 30, and the license of Dr. J. G. Colton, Cleveland, July 6.

Election.—At the annual meeting of the Columbus Southside Physicians' Association, July 23, Dr. John Rauschkolb was elected president; Dr. Charles D. Dennis, vice-president; Dr. Harry Pershing, secretary, and Dr. Everett T. Tidd, treasurer.

Taken to Prison.—Dr. Norman M. Geer, Cleveland, said to have been five times indicted, thrice tried and twice convicted for performing illegal operations, who was refused motion for a new trial July 24, was taken to the State Penitentiary, Columbus, to serve his term of four years.

Illegal Practitioner Convicted.—Alba Dalka, Broken Branch, an Indian "herb doctor" of Tiffin, charged with the illegal practice of medicine, is said to have pleaded guilty and to have been sentenced to pay a fine of $25 and costs and to be imprisoned for sixty days in the county jail.

New Tuberculosis Hospitals.—A tuberculosis sanatorium to cost $50,000 is to be erected on the site purchased in McBeath Park, Lima, by Auglaize, Mercer, Van Wert and Allen counties, under the law recently passed by the legislature.——Preble and Montgomery counties have united in the acquisition of Brookside Sanatorium, which was opened August 2 with 14 patients.

Cincinnati

Personal.—Dr. Paul Gerhardt Wooley, professor of pathology in the University of Nebraska, has accepted the position of professor of pathology, and Dr. William B. Wherry, of the United States Public Health and Marine-Hospital Service, has accepted the position of assistant professor of bacteriology in the Ohio Miami Medical College, the Medical Department of the University of Cincinnati. Dr. Wooley will be pathologist and Dr. Wherry bacteriologist to the Cincinnati Hospital.

OKLAHOMA

Not in Good Standing.—The State Medical Board announced, July 15, that the Epworth Medical School of Oklahoma City is not in good standing, and that its diplomas will not be recognized in the future unless the requirements of the board are met.

Personal.—Dr. Robert E. Looney, Oklahoma City, has been appointed temporary city physician during the absence of Dr. William M. Hubbard.——Dr. William P. Fread, Enid, who sustained a fracture of the left leg in a runaway accident, has recovered.——Dr. Marcus H. Heldman, assistant city physician of Oklahoma City, has resigned.

Licenses Revoked.—The licenses of J. P. Norvell, Weleetka; James F. Lee, Eldorado; John Lindsay, Shady Point; Homer L. Wilson, Woodward, and W. A. Clark, Hitchcock, are said to have been revoked by the State Medical Board on the ground that they were not graduates of recognized medical schools, and were, therefore, illegally registered.

Hospital News.—The Duke and Rucks Sanatorium for Mental and Nervous Diseases, Guthrie, will hereafter be under the sole control of Dr. John W. Duke.——The Oklahoma Baptist Hospital, Muskogee, was formally opened for the reception of patients August 10. The institution is under the control of a board of trustees and is open to all reputable physicians.——The Ladies' Hospital Association, Muskogee, will begin immediately the erection of a forty-room hospital.——Shawnee recently voted $20,000 in bonds for the erection of a municpal hospital at that place.

PENNSYLVANIA

Personal.—Dr. Andrew S. Stayer, Altoona, has been reappointed surgeon-in-chief of the National Guard of Pennsylvania, with the rank of lieutenant-colonel.——A memorial tablet to Dr. Nathaniel Bedford, the first physician in Pittsburg, was placed on his tomb in Trinity Churchyard recently by the Daughters of the American Revolution..

Officers Elected.—At the annual meeting of the Lehigh Valley Medical Association, held at Delaware Water Gap, July 22, the following officers were elected: President, Dr. Obadiah H. Sproul, Flemington, N. J.; vice-presidents, Drs. Jonathan M. Wainwright, Scranton, and William E. Gregory, Stroudsburg; secretary, Dr. Clinton J. Kistler, Lehighton; treasurer, Dr. Albert A. Seem, Bangor.

Lodge Practice Condemned.—At the regular meeting of the Dauphin County Medical Society held in Harrisburg, August 17, a resolution was adopted requiring the expulsion of all members of the society who act as physicians for fraternal or beneficial orders under contract to treat members of such orders and their families at a fixed yearly rate, or who consult with physicians who engage in lodge or contract practice.

New Hospital Staff.—The new staff of St. Francis' Hospital, Pittsburg, is made up as follows: Medicine—Drs. Thomas G. Simonton, Ernest W. Willetts, Benson A. Cohoe and Howard G. Schleiter; surgery—Dr. Miller; gynecology—Dr. Raleigh R. Huggins; diseases of children—Dr. Ogden M. Edwards, Jr.; *x*-ray and skin diseases—Dr. Russell H. Boggs; ophthalmology—Dr. Edward A. Weisser; otology, rhinology and laryngology—Drs. Chevalier Q. Jackson and Edith T. Waldie; pathology—Dr. Ernest W. Willetts; and neurology—Dr. Thomas M. T. McKennan, Theodore Diller and W. Walker.

Medical Camp of Instruction.—The War Department designated the following members of the National Guard of Pennsylvania to attend the recent medical camp of instruction for officers at Antietam, Md.: Dr. Joseph K. Weaver, Norristown, colonel and surgeon-general; Drs. George H. Halberstadt, Pottsville, William J. Ashenfelter, Pottstown, Charles C. Wiley, Pittsburg, Morris F. Cawley, Allentown, Charles S. Turnbull, Philadelphia, William E. Keller, Scranton, Robert G. H. Hayes, Bellefonte, Benedict S. Ralston, Pittsburg, G. S. Crampton and Harlan Shoemaker, Philadelphia, majors and surgeons; Drs. P. Francis Gunster, Scranton, and M. Toland Sime, Philadelphia, captains and assistant surgeons; Drs. Edward M. Iland, Coraopolis, James F. Edwards, Pittsburg, Henry H. Doan, Philadelphia, Frederick A. Hartung, Pittsburg, Frederick O. Waage, Philadelphia, Robert S. McKee, Newhaven, William J. Crookston, Pittsburg, and John I. Robinson, State College, lieutenants and assistant surgeons.

Philadelphia

Hospital Buys Property.—The officials of Pennsylvania Hospital have purchased for $70,000 the property at 724 Spruce street. The building is occupied at present by the Women's Southern Homeopathic Hospital, which plans to erect a $150,000 new hospital at Broad and Fitzwater streets.

Wills Hospital Addition.—Plans have been prepared for the enlargement and improvement of Wills Eye Hospital. Beside interior changes to the present building, there will be an addition of three stories and basement, 80 by 32 feet.

Bequests.—By the will of the late Harry S. Henry, his entire estate, which is said to amount to $1,500,000, will revert on the death of the widow and his two sisters, to five local hospitals for establishment of beds for the treatment of white children.——The late Gustave Berntz bequeathed $500 to the German Hospital, and the late Elizabeth McGarvey $300 to the Presbyterian Home.

Personal.—Dr. David Braden Kyle has returned from Europe.——Dr. Andrew B. Kirkpatrick sailed for Europe August 14.——Dr. John H. Musser has gone to Europe to attend the International Medical Congress in Budapest. He is chairman of the American committee.——Drs. Luther C. Peter, Carle Lee Felt and H. Brooker Mills have resigned from the staff of the Northwestern General Hospital.——Dr. H. M. Goddard has returned from Europe.

Appeal for Epileptic Clinic.—A letter of appeal has been sent throughout the city asking for funds for the establishment of a clinic and an employment bureau for persons suffering with epilepsy. The clinic is to be known as the Letchworth Clinic for the Home Treatment of Epileptics. It is also aimed to start an employment bureau to be known as the Society for Securing of Suitable Employment for Epileptics, in order that persons suffering with that malady may be enabled to secure work without danger to themselves or their fellow-workmen.

RHODE ISLAND

Bequests.—By the will of Mrs. Henry G. Russell, Providence, $150,000 is devised to the Rhode Island Hospital, and $25,000 to Butler Hospital.——The will of Capt. Ira Winsor bequeaths $3,000 to the Rhode Island Hospital.

Personal.—Brown University has conferred the degree of D.Sc. on Dr. Charles V. Chapin, superintendent of public health of Providence.——Dr. John Howard Morgan, Westerly, has been elected a member of the board of censors of the Rhode Island Medicolegal Society.——Dr. William C. Monroe, health officer of Woonsocket, and trustee of the state sanatorium for tuberculosis of Wallum Lake, has started for Europe.——Dr. William R. Morse, Providence, has decided to enter the medical mission field in China.——Dr. Charles A. Sylvia has been appointed vice consul of Portugal at Providence

TENNESSEE

Medical School Closed.—The trustees of the University of the South decided that the medical department should be discontinued after commencement exercises, October 28. The hospital will continue in operation in charge of Dr. Allen Lawrence Lear.

Hospital Plans.—Plans for the Baptist Memorial Hospital, Memphis, are rapidly nearing completion and the fund for the hospital is rapidly growing.——The present home of the University of Tennessee, medical department, is to be converted into a hospital to be used for both schools, until the building proposed on College Hill can be erected.

Personal.—Drs. E. D. Watson and Walter S. Lawrence have been appointed Roentgenologists to the Memphis City Hospital.——Dr. Albert G. Kern has been elected physician of the Tennessee Deaf and Dumb School, Knoxville, vice Dr. John M. Boyd, deceased.——Dr. and Mrs. Winston T. Michie, Memphis, have sailed for Europe.——Dr. William L. Dudley, Nashville, has returned from abroad.

Medical Officers for Encampment.—The adjutant general has announced the following appointments of medical officers for state encampment: First regiment, encampment at Waverly, Captains R. B. Underwood and J. M. Troutt, Lieutenant Morris Hartman. Third regiment, encampment at Knoxville, Major James R. Nankivill and Captains A. G. Kyle, John Overton and S. L. Wadley. State rifle competition, Knoxville, Captains Larkin Smith and William E. Cooper.

VIRGINIA

Virginia Military Surgeons in Camp.—The following medical officers of the Virginia National Guard have been in attendance at the school of instruction at Antietam, Md.: Lieut.-Col. Junius F. Lynch, Norfolk; Major Lawrence T. Price, Richmond; Captains Adam T. Finch, Chase City; J. Fulmer Bright, Richmond; F. K. Travers Warrick, Richmond; Israel Brown, Norfolk; Harry B. Wall, Norfolk; and Collins.

WASHINGTON

New Hospital Being Built.—Dr. Emilion O. Houda, Centralia, is erecting a private hospital at that place with a capacity for fifteen beds.

Personal.—Dr. Alfred Ernest Braden, Tacoma, has been selected to fill the newly created position of city school physician of that place.

GENERAL NEWS AND COMMENT

Warning Concerning Agent.—Dr. William J. Thompson, Portage, Wis., writes that a man giving his name as George V. Smiles, or George Van Sands, and presenting a card of the American Claim Buyers' Union, 306 Hodges Building, Detroit—a firm which was not found at the address given—has been held to the Circuit Court at Portage for the alleged attempt to obtain money under false pretenses. Dr. Thompson asks us to announce this in THE JOURNAL. He says that the man is also wanted on two warrants at Janesville, Wis.

Federal Laboratories Will Furnish Plague Specimens to Colleges.—Surgeon-General Wyman announces that the Federal Laboratory of the Public Health and Marine-Hospital Service in San Francisco, Cal., will furnish to medical colleges and medical museums requesting them tissues illustrating the lesions of plague in guinea-pigs, and when practicable in other rodents, as well as stained slides showing the organism of plague as it is found in tissues from infected persons or rodents. By availing themselves of this offer, medical colleges should be able by means of safe specimens to demonstrate to their students the lesions of plague, and thus give practical instruction regarding a disease which is of great practical interest at the present time.

CANADA

Work of Tuberculosis Sanatorium.—The building for the Nova Scotia Sanatorium for Tuberculosis was completed in 1904, is situated on sixteen acres of land at Kentville, and cost $20,000. From June 1, 1904, to June 1, 1909, there have been admitted 298 patients to the institution. Of this number, 245 are available for classification, 73 being incipient cases, 93 advanced with favorable symptoms, and 79 far advanced. The conditions on discharge were as follows: 52 apparently cured, 123 improved, and 70 not improved. There were 60 per cent. of apparent cures in the incipient cases. Patients to this institution are admitted on the examination of either of two medical examiners residing in Halifax, the maintenance rate now being $5.00 per week. The institution is under the control of the government of Nova Scotia. The medical profession are advocating a resident physician.

Medical Societies Meet.—The annual meeting of the New Brunswick Medical Society was held in St. John, July 20 and 21, under the presidency of Dr. John R. McIntosh, St. John. The following officers were elected: President, Dr. H. A. Murray, Fredericton Junction; vice-presidents, Drs. Clinton T. Purdy, Moncton, and George G. Melvin, St. John; corresponding secretary, Dr. John S. Bentley, St. John; recording secretary, Dr. George G. Corbet, St. John, and treasurer, Dr. Daniel E. Berryman.——The fifty-sixth annual meeting of the Medical Society of Nova Scotia was held in Sidney, July 7 and 8, under the presidency of Dr. Arthur S. Kendall, Sidney. The subject of a laboratory and bureau of public health came up for discussion, on the report of the committee appointed regarding the communication of Dr. Arthur Macdonald, Washington, asking that a resolution be passed calling for a sub-laboratory for scientific and sociologic study of criminals, etc. The meeting unanimously adopted a resolution asking that the Dominion Government establish a central bureau of public health. A committee was appointed to report on affiliation with the Canadian Medical Association.

FOREIGN

Five Hundredth Anniversary of University of Leipsic.—The University of Leipsic celebrated, July 29, its quincentenary. It was founded as an offshoot of the Prague university and for centuries took the lead in medical science, and in some respects it still maintains its supremacy. In recent years the names of His, Wunderlich, Thiersch and Credé are familiar to all, and the organization of the medical profession in Germany was first effected there in the foundation of the *Aerztevereinsbund*. The organization that protects the economic interests of German physicians—the well known *Leipziger Verband*—owes its origin also to a Leipsic physician, Dr. H. Hartmann, who is still at its head. The celebration of the quincentenary was most impressive, fully sixty universities around the world having sent representatives, and thousands of students, alumni and guests gathered in the great coliseum built for the occasion. One feature of the celebration was the historic procession representing the various periods in the life of the university, the students in historic garb. An elaborate banquet was tendered by the state to one thousand guests. Among the honorary degrees conferred was one on ex-President Roosevelt, and four other Americans were thus honored: Professor Michelson, the physicist; Professors Loeb and Wilson, the biologists, and Professor Burgess, the publicist. Our current German exchanges contain numerous historical articles depicting the evolution of the medical faculty and medical science in general at the university. The old reputation of the university as one of the two or three recognized centers of scholarship in the world is still maintained by the present faculty, which includes Curschmann, Trendelenburg, Hering, Flechsig and Rabl. The university of Leipsic has the most handsomely endowed chair of the history of medicine in the world, the Puschmann endowment, of which K. Sudhoff is the incumbent. Leipsic is the center of the German book trade, and large numbers of scientific periodicals are published there.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug. 14, 1909.

Bursting of an Aneurism Declared to Be An Accident

A case which has just been decided, again shows the difficulties which the recent Workmen's Compensation Act involves and the extraordinary extent to which the term "accident" has been stretched. A workman had a large aortic aneurism which was liable to burst at any moment. While tightening a nut with a spanner, but not using more than ordinary force the aneurism ruptured and he fell dead. The case went into court and the judge held that death was the result of accident within the meaning of the act and gave compensation accordingly. The case was then taken to the court of appeals and the appeal was dismissed. The court held that the man, admittedly suffering from aneurism, had incurred a strain of a not extraordinary character during his work, which ruptured the aneurism. Therefore the case came within the law as laid down by recent decisions. But such cases have a result the very opposite of that intended by the framers of the act, which was intended to benefit workmen regardless of all other interests, and was passed in the present House of Commons by a government actuated by strong humanitarian motives and constantly importuned by a powerful and greatly increased labor party. Employers insure their workmen against the liabilities of the act. Insurance companies refuse to accept men with any physical defect or disease, however slight, which increases the chance of accident, and these are consequently refused employment. The result is that many men suffering from some slight defect which in no way interferes with their capacity for work are unable to obtain employment.

Pharmacists Object to Physicians Dispensing

It is a standing grievance with the medical profession that pharmacists not only dispense physicians' prescriptions, but do a large amount of what is termed "counter prescribing," generally for minor maladies, but sometimes inadvertently for serious ones. On the other hand the pharmacists consider it a grievance that the majority of the physicians in England dispense their own medicines. The only ones who do not are the consultants and the very small number of general practitioners whose clientèle is almost entirely wealthy. At the annual meeting of the British Pharmaceutical Conference, which has been held at Newcastle-on-Tyne, the president, Mr. J. F. Tocher, opened a discussion on the subject, "Should the Dispensing of Medical Prescriptions Be Confined to Pharmacists?" He said that the great grievance of pharmacists was that they were the only class specially educated and properly trained to prepare and dispense medicine, and as such, many of them got little if any employment in this kind of work because it was done by the medical profession. The total transference of the dispensing of prescriptions from physicians to pharmacists would in his opinion be advantageous to the medical man, the pharmacist and the public. He proposed to institute a joint standing committee, consisting of members of the British Pharmaceutical Conference and of the British Medical Association. Later if practicable, interested members of the public, including leaders of friendly societies, might be added. The duties of this committee would be to collect information on the actual practice with respect to dispensing and to the facilities for transference of the work to pharmacists in the cases in which the work was done by physicians. A number of local physicians took part in the discussion and a resolution to the above effect was carried. A discussion on this subject took place a few years ago in the columns of the *Lancet* and it was shown that it would be a great advantage in many ways if physicians were relieved of the work of dispensing. The profession would gain in dignity and would have more time to devote to its proper work, the treatment of the sick, and also more leisure. But in poor and club practice there would be a marked increase of expense which it would be difficult to transfer to the patients. It is very unlikely that the present system will be abolished. Moreover, the claim of pharmacists

that they are the only persons trained to dispense medicines is not correct. Every medical student has now to go through a course in pharmacy.

Carbon Tetrachlorid for Shampooing

In a previous letter (THE JOURNAL, July 31, p. 392) I reported the case of a young woman who died while her hair was being shampooed with tetrachlorid of carbon. The view that the shampoo is not quite so harmless as has been thought is confirmed by an article contributed to the *Lancet* of August 7 by Dr. A. D. Waller, director of the physiologic laboratory of the University of London, with an added note by V. H. Veley, D.Sc., F.R.S., a distinguished chemist. Dr. Waller has investigated the toxicity of various drugs by means of their action on isolated muscle. He finds that the toxicity of a molecule of chloroform is 100 times greater than that of a molecule of alcohol. Carbon tetrachlorid he finds more toxic than chloroform and the incriminated hair shampoo (which contains in addition, impurities, of which the most important is carbon bisulphid to the extent of 1.5 per cent.) still more toxic. Dr. Veley considers that the bisulphid is so intensely poisonous that even in this small percentage it increases the toxicity of the shampoo. He further points out that as carbon tetrachlorid is very heavy (5.3 times as heavy as air), notwithstanding any fanning the vapor, which is considerably more toxic than chloroform, must fall over the face of the person shampooed. He thinks that legislation is called for to prohibit the use of carbon tetrachlorid in hair-dressing.

Munificent Bequest for Cancer Patients

If the cancer problem is not solved it will not be for want of funds. The latest sum to be devoted to the disease is the munificent one of $1,250,000, which was left by the late Mr. Harry Barnato for the purpose of founding some charity in commemoration of his brother, Mr. Barney Barnato, and his nephew, Mr. Woolf Joel. After considering many schemes the trustees have decided to apply the money to the building and endowment of an institution for the reception of cancer patients. To increase the potentialities of the bequest the institution will be administered in connection with the Middlesex Hospital, the only general hospital in London which has special wards for cancer patients and special laboratories devoted to investigation of the disease. A site has been acquired adjoining the hospital's cancer wards. The advantages of the trustees cooperating with the hospital are considerable. The cost of organizing the new undertaking will be greatly diminished and they will have the guidance—administrative and medical—of those whose experience of the disease is exceptional. The trustees intend to devote $10,000 to the erection of research laboratories of a character calculated to induce men of the highest skill to work in them.

A Woman Member of the Royal College of Physicians

For the first time in its history the Royal College of Physicians has admitted to its membership a woman, Miss Ivy E. Woodward, M.D. Lond. The ordinary qualifications granted by the college is the license which is associated with the familiar letters L.R.C.P., but the distinction now obtained is the M.R.C.P., the highest diploma obtainable by examination at the college, which is possessed by, and is the hall-mark of, consulting physicians.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Aug. 11, 1909.

The Bureaus of Hygiene

According to the law of 1902, each city of more than 20,000 inhabitants is to have a bureau of hygiene with authority to take sanitary measures and to oversee their execution throughout the commune. But sixteen of the most important communes of the Department of the Seine have protested against the change in organization required by the law, both on account of the expense, and also because they are obliged to put a physician at the head of each bureau. The mayors of these communes say that they can not dismiss the non-medical officials who have hitherto directed the bureaus. The prefect of police thought that he might compromise by merely exacting that each director who did not have a medical degree should be assisted by a physician. The Council on Hygiene has just refused to sanction a compromise by which physicians should work in bureaus of hygiene under the orders of non-medical directors.

Increase in Medical Fees

The medical society of the fourth ward (arrondissement) of Paris having recently taken up the question of the increase of medical fees (THE JOURNAL, July 10, 1909, p. 126), a mixed commission, composed of representatives of the medical societies of the Department of the Seine, of Paris and of the wards of Paris was formed to study this question. This commission has just decided that it is necessary (1) to increase medical fees by at least a third over current rates for ordinary visits and consultations, each ward making the minimum rates that are suitable for it; (2) to ask higher rates for urgent, evening and Sunday visits; and (3) to establish a minimum scale for the special procedures of current practice.

The Congress of Alienists and Neurologists

The nineteenth Congress of Alienists and Neurologists of France and of French-speaking countries has just been held at Nantes, August 2 to 8. Among the questions discussed, which I have already mentioned in a preceding letter (THE JOURNAL, June 19, 1909, lii, 2006) that of insanity in the army from the clinical and medicolegal point of view, assumed special importance. The ministry of war had sent a special delegate, Dr. Simonin, professor at the school of military hygiene at Val-de-Grace. It was the first time that the military administration had been represented at the Congress of Alienists and Neurologists. Numerous magistrates were also present. The president of the congress, Dr. Vallon, chief physician of the Ste. Anne Asylum at Paris, congratulated himself on the increasing interest among legists in the problems of medicolegal psychiatry.

According to the report of Dr. Granjux of Paris, there are annually invalided 0.6 per thousand of the effective military force for "mental alienation, idiocy and general paralysis." In this reckoning those who are invalided for hysteria, epilepsy, neurasthenia and alcoholism are not included; if the latter are added the percentage is 1.8 per thousand; and even this is far too low to represent the actual proportion of the insane, for insanity is often not recognized. The French army, however, is not in a comparatively bad state in this respect. The number of the insane is, it is true, somewhat less in the German army, but it is even a little larger in other armies having general military service, and very much larger in the countries where military service is not general, such as Great Britain, Belgium, etc.

After the discussion of the reports of Dr. Granjux, and of Dr. Rayneau of Orleans, the congress passed resolutions looking toward the strengthening of the army and navy medical corps on the side of psychiatry and the collection of better statistics on insanity.

The congress will meet in 1910 in Brussels and Liège under the presidency of Drs. Crocq of Brussels and Klippel of Paris. The subjects of discussion will be: (1) sleeping sickness and narcolepsy; (2) the classification of cutaneous lesions in nervous maladies; (3) alcoholism from the criminologic point of view.

The French Association for Advancement of Science

The thirty-eighth session of the French Association for the Advancement of Science was held August 2 to 7 at Lille under the presidency of Professor Landouzy, dean of the College of Medicine of Paris. M. Henri Poincaré of the French Academy and the Academy of Sciences was awarded the large gold medal of the association, which last year was awarded to the illustrious English savant, Sir William Ramsay.

The section of medicine, presided over by Professor H. Roger of Paris, discussed questions of practical interest, such as the new methods of diagnosis and treatment of tuberculosis, recent contributions to the subject of epidemic cerebrospinal meningitis, etc.

In the section of medical electricity, which brought together a great many members, a large place was naturally given to radiography. A paper by Dr. A. Imbert, professor of medical physics at the College of Medicine of Montpellier, on errors of interpretation in radiography and a paper on the same subject presented by Drs. A. Mouchet and Lamy of Paris, aroused great discussion. A great number of papers were devoted to the treatment of arteriosclerosis by high frequency currents. Dr. Lejars, professor *agrégé* at the College of Medicine of Paris, presented a question of great practical interest, namely, the indications for use of electricity in ileus.

Next year the association will meet at Toulouse under the presidency of Dr. C.-M. Gariel, professor of medical physics at the College of Medicine of Paris.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Aug. 4, 1909.

The Incidence of Infectious Diseases in Prussia

According to the ministerial report on the health of Prussia in 1907, which I have already mentioned, there was a considerable increase in the mortality from influenza. There died of influenza in Prussia 5,512, that is, 0.145 per thousand living and 0.81 per hundred deaths. The largest previous influenza mortality occurred in 1892, during the great influenza pandemic, when about 16,000 or 0.523 per thousand living died in Prussia. The three winter months, January, February and March, in 1907, especially February, had the highest mortality; September the lowest. The deaths according to ages were as follows: Infants, 351; children 1 to 15 years old, 354; between the ages of 15 and 60, 1,395, and over 60, 3,412. The number of cases of typhoid continually decreases in Prussia, dropping from 4,410 cases in 1901 to only 2,168 in 1907. The typhoid mortality is declining still more rapidly, from 0.264 per thousand living in 1887 to only 0.057 in 1907. The largest number of deaths according to age occurs between 30 and 40; the highest relative mortality between the ages of 20 and 25. The morbidity was highest during the summer months. In most cases the diagnosis was confirmed bacteriologically. The government laboratories have also in many cases discovered bacillus-carriers; for example, in a village parsonage in which cases of typhoid continually occurred, while the rest of the village remained free, it was discovered that the pastor's mother had typhoid bacilli in her stools; she had had a severe attack of typhoid thirty-seven years before. Among the customers of a city milkdealer cases of typhoid continually occurred, and a maidservant in the village from which the dealer obtained his milk was discovered to be a bacillus-carrier. The spread of typhoid generally occurred through conveyance from person to person; also through infected water, through milk from dairies, and through other foodstuffs; a few times through the washing of the clothes of a typhoid patient. There were 57 cases of paratyphoid reported, 7 of spotted fever, and 3 of relapsing fever. There were 185 deaths from dysentery. Malaria seldom occurs. Trachoma is still prevalent, especially in the east of our country. In the district of Königsberg there were 1,872 trachomatous school children reported in 1907; in the district of Dantzig, 2,000; in the district of Posen, 3,800. There were 2,591 cases of epidemic cerebrospinal meningitis with 1,613 deaths, or 62.47 per cent.; the largest relative number of cases occurred in April. Only 142 cases of smallpox were reported during the whole year. There were 338 cases of traumatic tetanus, the mortality being about 75 per cent. The patients treated for gonorrhea in the general hospitals numbered 20,000, and for syphilis and soft chancre, 22,000. There were 3,771 mothers who died of puerperal fever, or 2.942 per thousand parturients. The diphtheria mortality has continued to decline during the last decade; in 1898, 18,147, or 0.556 per thousand living, died; in 1907, only 9,307 died; that is, 0.246 per thousand living.

Death of Professor Runge

A few weeks after the death of Pfannenstiel, German gynecology suffered another heavy loss in the death of the director of the Göttingen gynecologic clinic, Prof. M. Runge. He died in Berlin, aged 59, following an operation for kidney disease. Runge began his academic career as assistant to Leyden in Strasburg, his gynecologic work as assistant to Gusserow in Berlin. Before his professorship at Göttingen, in 1883, he was called to Dorpat as ordinarius, and in 1888 he, like all the other German professors, left the Russianized and ruined university. Aside from his numerous scientific works, Runge was best known by his text-books on obstetrics and gynecology, and as the author of the official manual for midwives now in use in Prussia.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Aug. 9, 1909.

The Health of Potters

A series of investigations into the health of certain classes of the population has been instituted by Chyzer and reported to the board of health. The occupation of the pottery makers requires the presence of lead in the inhabited places, and as in this country there are many potteries in dwelling-houses where even young children are employed, the danger to health is great. Thus in some instances the dust collected from these houses contained up to 14 per cent. of lead. Constant human lead-poisoning is often observed among them; the household animals also fall victims to the occupation of their masters. Fowls and ducks can not thrive in the vicinity of potteries; dogs and swine are killed by drinking water polluted with the lead-containing waste of the process, and cats are especially susceptible. The latter animals often show colic, loss of flesh and nervous disturbances, with terminal paralysis. As a rule, all household potters are attacked at least once before having completed their third year at this occupation, and many patients had been five or six times in the hospital. It is not yet possible to forbid the factories in dwelling-houses, as many people would be thrown out of work, especially in this country; and the regulations of the board of health dealing with these conditions are in force only in the towns. The death rate of the potters is high: Of 3,010 men examined, only 265 were apparently healthy, and only 16 were over 60 years old. The average age at death is only 41 years! The conclusions arrived at by the investigations point to the necessity of prevention of all kinds of pottery work except in properly conducted large factories.

The Arrangements for Infectious Corpses in the Vienna Cemetery

A new morgue has been opened recently in Vienna in the general cemetery for the purpose of dealing with persons dead from infectious diseases. The corpses are placed in the lying-in-state hall, which is separated by glass walls from the general waiting-hall for the friends and relations of the deceased. Special care is taken to prevent the possibility of transmission of disease during the burial ceremony. Once the body is brought to the cemetery, nobody touches it except the two to four men necessary to bring it to the grave. Even the priest must fulfill the necessary rites while separated from the body by a glass screen. The corpse is brought in a disinfected coffin, is covered with phenol or lysol, and the friends may follow only at a certain distance. The bearers must, after each funeral, change their clothes, which are at once disinfected by steam; they themselves must take a hot bath at once. The bathing rooms divide the infected area of the building from the non-infected one. Doctors, servants, bearers—all persons who have had anything to do with the corpse in the house—must pass the same ordeal of bath and disinfection of clothes. Their clothes are handed to them only after their baths. The refuse and water used in the morgue are carried away by a special system of drainage and thoroughly disinfected. A dissecting-room, together with a laboratory, is in connection with the morgue, and all work is done here under the strictest precautions. For especially dangerous corpses, there are three isolation cells, capable of holding three bodies at a time, so that a more effective disinfection is possible. The cost of the institute amounted to only $60,000, and the current expenses amount to about $70 per funeral.

The Weather and the Health

The unusual climatic conditions this summer have had a marked influence on the general health. According to the monthly returns of the bureau of health the number of affections of the alimentary canal among children is unusually small compared with the number of cases of infectious diseases owing to the protracted period of rain lasting now, with some slight interruptions of from three to five days of fine weather for more than twelve weeks. Summer diarrhea, cholera infantum and other summer affections are nearly absent. Perhaps the freedom from cholera, in spite of its ravages in the neighboring districts of Russia, is also partly due to the excess of rain. Another very welcome feature of this summer, in itself perhaps no less responsible for the good health of the public, is the complete absence of flies and other insects observed by the farmers. Diseases of the respiratory organs, as well as rheumatic conditions, have been and still are very numerous, though mortality is low. On the whole, central Europe, to which this country belongs, has had the privilege of enjoying a regular oceanic climate similar to that of Ireland.

The Conflict Between Dental Surgeons and Dentists

In this country there are two kinds of dentists, the *Zahnärzte*, surgeon-dentists with the diploma of M.D., and the *Zahntechniker*, or dentists without university or hospital diplomas. The latter were until recently only assistants of the surgeon-dentists, doing chiefly the technical dentistry, prosthetic appliances, putting in artificial teeth and crowning partly destroyed teeth. But about a dozen years ago these assistants obtained permission to practice this prosthetic dentistry if controlled by a qualified surgeon, and since that time they have always been endeavoring to shake off the

control and become independent. Indeed, they even try to get the whole of dentistry into their own hands and leave to the surgeon-dentist nothing but the filling of the carious teeth, or the extraction of whole teeth, while the extraction of stumps necessary in the adaptation of the mouth before use of artificial teeth they claim for themselves. The demands of the technical dentists mean nothing else but the overthrow of the law prohibiting quackery. The medical profession as a whole has endorsed a protest addressed by the medical council of Vienna to the Minister of the Interior. A compromise has been suggested by the other party, all the present dentists possessed of diplomas or not, to be allowed to practice in the human mouth, but in future no independent technical dentists to be permitted. This being refused by the medical profession, the technical dentists have changed their tactics and cry for a clear division of rights, surgical procedures to belong to the surgeons, artificial dentistry to the technical dentists. The acceptance of this platform would mean the ruin of the dental surgeons, for hardly ten men could make a living out of extraction and stopping of diseased teeth only. There are over 400 dental surgeons in Vienna alone, while there are in all Austria about double the number of technical dentists. There is reason to hope that the medical point of view, being identified with the interests of the public health, will prove the stronger of the two.

The Jubilee Hospital in Vienna

The municipality of Vienna proposes to spend $2,250,000 in the erection of a hospital with 1,000 beds, intended to commemorate the jubilee of the Emperor Francis Joseph. The directors and heads of the departments will not belong to the Vienna University. In October the work will be commenced, and it is expected to finish it in eighteen months. The plans provide for open air pavilions and spacious corridors for children. Details of the hospital, which will be the most up-to-date institution of its kind, will be forthcoming in a short time.

Pharmacology

BUCHANAN CANCER REMEDY

A correspondent submitted for analysis a "cancer paste" that had been manufactured and sold by the Buchanan Medical Co. of New York City. The only information available concerning the composition of the paste was that contained in a booklet formerly published by the manufacturer, in which it is stated:

"Chlorid of Chromium (ozonized; the cancer antidote). The liquid chlorid of chromium is added to pulverized bloodroot, or some other inert powder; is made into a paste of the consistency of tar . . ."

ANALYSIS

The sample was submitted to the Association laboratory, which reported as follows:

"The sample of Buchanan's Cancer Cure was a dark, brownish-red, pasty mass of about the consistency of tar. Its odor was not characteristic. Examination showed that chromium salts were not present. The active ingredient was found to be zinc chlorid. With this was mixed a finely ground vegetable powder and some mucilaginous substance. Glycerin, sugar, alkaloids, resins and fats were not found. The vegetable tissue possessed the general structures of rhizomes and in some characters resembled bloodroot, but could not be identified positively. There was considerable starch present, but its identity could not be made out, since the structure of the starch grains had been destroyed, probably by the zinc chlorid. A red coloring matter was present. Further than a quantitative determination of zinc chlorid, an exhaustive chemical examination was not undertaken, although tests were made for a considerable number of substances which the nature of the remedy suggested.[1] The analytical results are given herewith:

Anhydrous zinc chlorid	46.3 per cent.
Vegetable tissue, dry	9.2 per cent.
Mucilaginous matter	12.2 per cent.
Moisture	19.1 per cent.
Undetermined (starch, loss, etc.)	13.2 per cent."

1. DETAILS OF ANALYSIS.—Owing to the small quantity of sample submitted, duplicate determinations could not be made.

Alcohol-insoluble: A portion was dissolved in alcohol so far as possible, filtered, dried and weighed; 1.6578 gm. gave 0.3557 alcohol-insoluble residue, or 21.4 per cent.

Zinc: The alcohol-insoluble portion was washed, dissolved in hydrochloric acid, so far as possible, the filtrate, added to the alcohol-soluble portion, the mixture evaporated to small bulk, and the zinc precipitated as zinc ammonium phosphate. (Olsen, "Quant. Chem. Anal.," 1904, pp. 82 to 84.) The precipitate was dissolved in hydrochloric acid, re-precipitated, dried, ignited and weighed as zinc pyrophosphate. 1.0790 gm. gave 0.5599 gm. zinc pyrophosphate, equivalent to 46.3 per cent. anhydrous zinc chlorid.

Moisture: This was determined approximately by drying over concentrated sulphuric acid; 1.0790 gm. gave a loss of 0.2063 gm., or 19.1 per cent.

Vegetable Tissue (water-insoluble portion): This was determined by dissolving a sample as completely as possible in distilled water, filtering and drying the residue at 98C.; 3.264 gm. gave 0.3011 gm. residue, or 9.23 per cent.

Mucilaginous Matter: An approximate value for the mucilaginous substances and soluble starch was obtained by subtracting the portion insoluble in water (vegetable tissue) from that insoluble in alcohol (vegetable tissue and mucilaginous substances). 21.45 per cent.—9.22 per cent.=12.23 per cent.

Zinc chlorid mixed with an absorbent, such as flour, starch, powdered galangal, powdered althea, gypsum, etc., has been employed in the treatment of cancer for many years. The Buchanan remedy, therefore, evidently contains nothing new. It belongs to that great army of "wonderful new discoveries" which examination usually shows to be well-known remedies. The statement that the cancer antidote is "chlorid of chromium ozonized" is not only false but meaningless, no such product being known. It is evidently intended to mislead the unwary physician by the use of the term "ozonized."

THE AMERICAN COLLEGE OF MECHANO-THERAPY
"Manual Manipulation" and "Curative Mechanics" Taught by Mail

In the realm of the new "drugless" quackery probably no field has been more thoroughly worked than that of "manipulation." The absence of laws in many states and the inadequacy of such laws as do exist makes the "treatment" of disease by mechanical means a veritable gold mine for the unscrupulous and incompetent. The rise of osteopathy and its latest freak offshoot—kiropractic—is but one illustration of what has been done in the way of commercializing manual manipulation as a therapeutic agent.

In his "Great American Fraud" series Samuel Hopkins Adams calls attention to the absurdity of the proposition put forward by numerous quacks that it is possible to treat diseases by correspondence. As Mr. Adams says, it is "like mending chimneys by mail." On a par with this is the teaching of "manual manipulation" by correspondence. This feat is accomplished (?) by an institution calling itself the "American College of Mechano-Therapy" having its headquarters in Chicago.

The advertisements of this concern put the "science of mechano-therapy" as taught by it on a frankly commercial basis. The important and much-emphasized point is that by studying mechano-therapy you can "earn from $3,000 to $5,000 a year."

WHAT IS A "MECHANO-THERAPIST?"

The individual who, attracted by this get-rich-quick proposition, is anxious to learn something about the general principles of the cult, is told:

"His [the mechano-therapist] medicines . . . . . are not drugs but scientific combinations of food, circumstance, idea, water and motion."

After mentally digesting this somewhat abstruse proposition, descriptive of the fundamental principles of mechano-therapy, the reader learns further, that:

"His instruments are not knives and saws, but his own deft hands and the vital processes of the body itself, the circulation, respiration, secretion, etc., which he manipulates as he sees fit and his judgment dictates."

In other words the graduate of the American College of Mechano-Therapy "manipulates as he sees fit" his patient's "secretion" by "scientific combinations of food, circumstance, idea, water and motion." It would surely be hard to find a more meaningless jargon of words outside of Mrs. Eddy's "Science and Health."

The dean of this "college" is W. C. Schulz, M.D., who, we are told, "has had a thorough European training, and so *combines all the learning of the great schools of the world.*" [Italics ours.—ED.] The subjects taught at this institution of learning are, according to the catalogue, the following:

"Anatomy, Physiology, Diagnosis, Hygiene, Dietetics, Hydrotherapy, Manual Manipulation, Swedish Movements, Vibration, Oscillation, Mechanics (curative), Suggestive Therapeutics . . . Ethics, Establishment, Promotion and Business Methods."

In addition to these numerous subjects, "Osteopathy" is thrown in for good measure; and all this is taught by correspondence! Apparently there is no limit to human credulity when cupidity beckons. In referring to the time required to complete the "course" and thus receive the diploma, which is "handsomely executed on art parchment," we are told:

"In six months you can begin practicing mechano-therapy."

Of course the acquirement of the *tactus eruditus* is all-essential, "but it is no more difficult than learning to ride a bicycle." And incidentally that suggests the commercial possibilities of teaching bicycle riding or even equestrianism by mail!

THE "BUSINESS SIDE"

In addition to the various subjects from anatomy to suggestive therapeutics that are taught by this "college" the curriculum includes "The Business Side of Mechano-Therapy." This important subject deals with such problems as:

"How to approach a Patient."
"How to get the Fees at once."
"The Business talk that will make the Patient willing to pay the fee."
"How to handle the Question of the size of a Fee."
"Real Money Talk."
"Always get Cash down."

The "business side," too, is particularly emphasized in the advertisements of the college:

"Opportunities to make money in Mechano-Therapy are everywhere. You need not leave home to make your fortune."
" . . . . we guarantee success . . . . . "
"We fit you in a few months so you may become successful and earn from $3,000 to $5,000 a year."
"Unlimited income to graduates."
"We know of no other calling . . . which promises the same financial returns that Mechano-Therapy does."

Such is the bait, which, judging from the amount spent in advertising, is so productive of results in catching the ignorant and avaricious.

The "instructor" in "business methods" is one S. J. Tinthoff, who also is treasurer of the "college." We learn from the prospectus that as instructor, he "is eminently well qualified for this position." In fact:

"His knowledge of the proper methods a physician, specialist or Mechano-Therapist may pursue in order to build up a large practice, is perhaps unsurpassed by that of any other man in the United States."

We are told, too, that F. S. Tinthoff, brother of S. J. Tinthoff, and "Director of the Correspondent Department, is also a trained business man and expert correspondence instructor." We understand that F. S. and S. J. Tinthoff operate the "Aurum Company," which does a mail-order business in "Vestro," which is modestly claimed to be "the only true Bust Developer on the market to-day." If we are not mistaken, too, F. S. Tinthoff was president and treasurer of the now defunct "Physician's Institute" of Chicago. The question arises: Does an experience in operating a "physician's institute" and filling mail-orders for the "only reliable bust developer" qualify a man for the position of "instructor" in a correspondence "college of Mechano-Therapy?"

LEGAL STATUS OF MECHANO-THERAPY

The American College of Mechano-Therapy advertises: "We Teach You How to Treat Disease Without Drugs." A prospective student who wished to know what legal restrictions there might be to the practice of this method of "treating" disease, wrote as follows: "If I should take your course and receive a diploma could I practice Mechano-Therapy in *any* of the states? I understand that the different states have different laws regarding the practice of medicine and I would like to know if there are any restrictions in regard to Mechano-Therapy?"

The reply he received may well be pondered over by those who believe that medical practice acts exist for the benefit of the public:

Dear Friend:—There are no laws on the statute books regarding Mechano-Therapy. In Illinois for instance, there is the so-called "Drugless Healing Act" applying to all such methods as Mechano-Therapy, Osteopathy, etc. Some of our graduates have qualified under this law by examination, while *others carry on their work under the advice and consent of a friendly M.D. We recommend the latter method* [Italics ours.—Ed.] until such time as Mechano-Therapy is regulated by legislative enactment in the various states.

Yours truly,
American College of Mechano-Therapy,
W. C. Schultze, M.D.

METHOD OF INTERESTING "STUDENTS"

The individual who writes to this college for information receives a three-page letter and a "prospectus." The latter is entitled, "How to Become a Mechano-Therapist," and the first page is taken up with a full-page picture of the "home of the American College of Mechano-Therapy." This "home" is pictured as a nine-story building, across the top of which appears in large letters, the legend: "American College of Mechano-Therapy." The natural inference to one not conversant with the facts would be that the "college" occupied

DON'T BE A WAGE SLAVE!
While You May Earn From
$3,000.00 to $5,000.00 a Year
Are you tired of working for wages which barely keep body and soul together? Have you the ambition to enjoy the profits of your own labor? To gain social prominence and financial independence? To go forth among your fellow men with your head up—as honored and respected citizen of your locality?
THEN SEND FOR OUR FREE BOOK
Read What Our Graduates Say
HOW TO BECOME A MECHANO THERAPIST
The Advertising Manager of the Appeal to Reason, Girard, Kan., says:
CAN I LEARN IT?
A Personal Word
We Teach You in Your Own Home
SIMPLY SEND THE COUPON FOR THIS FREE BOOK
Be Independent!
Do You Want to Always Work for Others?
Try to realize what this opportunity means TO YOU.
But if you have a spark of manhood or womanhood left—any ambition whatsoever to improve your condition socially and financially, learn this pleasant profession. It will make you independent for life.
For your own sake, investigate this matter. In doing so you place yourself under no obligation whatsoever. We can give you but a faint idea of the possibilities of Mechano-Therapy in this limited space, but the Book explains everything. Get it free, and read it in the privacy of your home. Digest its contents at your leisure, and you can then decide whether you wish to embrace the opportunity we offer you.
It is so easy—so VERY easy—to get all the details—without trouble or expense. Simply sign and send us the coupon now.
American College of Mechano-Therapy
Department 758 120-122 Randolph Street, Chicago, Illinois
Illustrated BOOK How To Become A Mechano-Therapist Sent To Any Address FREE
LOOK! LISTEN!

Reproduction of a full-page advertisement from the *Boston American*, March 31, 1909.

the entire building. In reality, however, it occupies some rooms on the sixth floor of the building in which it is located, and the building carries no such legend as is shown in the picture.

VARIABLE TUITION RATES

The form letter, after expatiating on the virtues and money-making possibilities of the "course" winds up by calling attention to the fact that the tuition is $100 cash "for the complete course." The tuition rates, however, seem to vary. One person who inquired about the course was told in the first letter that it cost $100; in the second letter he was told that "we expect shortly to advance our fees to $200"—but they would still accept this particular individual at the $100 rate; in the fourth letter he was told that the advance had been made "and our present terms are $200 cash," but as a special proposition he would be accepted "at the old special reduced rate;" in the fifth letter he was offered the "complete course" for $60, but the "college" insisted that he must "hold this special, reduced price strictly confidential." As a (presumably) final "confidential price" he was offered the "regular $100 correspondence course in Mechano-Therapy for only $25 cash."

Another individual was offered the course for $50—and this, too, within a few days of the time that the first person received notice that the fees had been "advanced" to $200. Other persons have been offered a 50 per cent. discount ($50 cash) with the first letter. It should be said that all the "enrollment blanks" which we have seen—and they are many—give the cost of the course as $100.

The extensive advertising done by this concern would seem to demonstrate its profitableness. On both sides of the Atlantic the public has been advised through the daily and weekly press of the commercial possibilities of "mechanotherapy" as taught by this "college." In commenting on the part that the press plays in making such concerns as this profitable, London *Truth* says:

"It passes my understanding how wealthy newspaper proprietors . . . can condescend to take money for foisting this sort of bunkum on their readers; but as long as they do so, cheap postage to America will certainly put money into some pockets."

Elsewhere the same publication, in describing the "college," calls it "a concern which proposes to give postal tuition in quackery to British fools"—a description which can only be improved by the substitution of "English-speaking" for "British."

Correspondence

Age and Exercise

To the Editor:—I have read with approbation your editorial, "The Septuagenarian Pedestrian," in the issue of August 7. I fully agree that Mr. Weston's performance is "sufficiently noteworthy . . . to deserve mention in a medical journal;" in fact, I go further and assert that it is a demonstration of transcendent importance to all mankind that a man after he is biblically dead, so to speak, having passed his seventieth birthday, can accomplish a feat hitherto considered next to impossible, to-wit, the walking of 3,975 miles in 105 days, or almost 38 miles a day, over, in many cases, execrable roads or on railroad ties, in severe storms, in mud, snow and sleet and sometimes, which is often worse, sand. This great exhibition of human pluck and endurance at an advanced age, is, to my mind, of far more importance than the question of the exact bacillus that causes meningitis, to the discussion of which you cheerfully give up 18⅛ inches of your most conspicuous editorial space, while Mr. Weston's performance gets less than 2½ inches of space, and that at the "tail end," giving one the impression that it is just a "filler." Pardon me if I seem to undervalue your admirable "leader." On the contrary, I enjoyed it and profited by it greatly.

However, my principal object in writing this letter is that I wish to correct one or two erroneous inferences which might readily be drawn from your editorial on pedestrianism. You say that "he [Weston] comes before the public in this spectacular way after about a quarter of a century of comparative obscurity." Among those who take no interest in feats of human endurance, and the improvement of man's physique, Mr. Weston's career for the past twenty-five years may have excited little or no interest. Yet his utterances on temperance and the benefits of exercise have attracted, and deservedly so, considerable attention; and inasmuch as he has participated in a number of pedestrian contests during that period, the sporting element also have had occasion to keep him in mind. In support of this contention, I venture to give a partial list of his performances since 1867:

In 1867 he walked from Portland to Chicago.

In 1868 he walked 100 miles in 24 hours.

In 1870 he walked 100 miles in 21 hours and 39 minutes.

In 1875 he walked 115 miles in 23 hours and 40 minutes without a rest.

In 1879 he walked 550 miles in 141 hours and 44 minutes.

In 1884, under the auspices of the "Church of England Temperance Society," he walked 50 miles a day for 100 consecutive days (Sundays excepted) over English roads, making a total of 5,000 miles, and lectured every night on temperance, of which he has always been an ardent advocate.

In 1886 he walked 2,500 miles against Daniel O'Leary and beat the latter by 200 miles.

In 1893 he walked 160 miles in 39 hours and 59 minutes.

In 1907 he walked from Portland to Chicago in 24 days and 6 hours, beating his own record of 40 years before, by over 16 hours.

He has frequently spoken of his way of life, asserting that he has never taken a drink over a bar. That he eats only twice daily as a rule, and then in great moderation. That he walks 12 or 15 miles every day for exercise, and is consequently always "in condition." He sleeps six hours at night and takes a siesta during the day. Hence it is fair to say that the man is well known, and that the causes of his wonderful endurance are well known. Your editorial concludes with the words that "probably many other men with like training and temperate habits could somewhat approximate his record." A little examination of the subject will show that other men, not to say women, have already approximated his record. If you will pardon me, I will take up a little more space to quote a few instances.

Moses Cleveland, a cousin of former President Grover Cleveland, when 82 years old, ran a foot race of a half mile against L. C. Lawrence, aged 80, at Worcester, Mass., and won after an exciting contest by a few yards. Mr. Cleveland declared that he could have run another half mile just as fast as he had won the race, and challenged any man in the world of his age to run a foot race of any distance for any stakes.

Surgeon Major Hinton, who enjoys the distinction of being the oldest member of the Royal College of Surgeons in Great Britain, is in his 95th year. He walks for pleasure 5 miles or more every day. In 1851, Mary Callnack, then 84 years of age, walked from Penzance to London, a distance of nearly 300 miles.

The Emperor Francis Joseph of Austria, at 76 years of age, still stalked "the chamois in its mountain fastnesses."

Timonthy Dillon died in New Rochelle, N. Y., in August, 1906, at the age of 100 years. Up to within two days of his death he had taken a daily walk of 4 miles and had formerly walked 20 miles and back twice a week.

Mark All, an Englishman, 78 years of age, had a year or two ago walked 51,751 miles in an attempt to walk 60,000 miles in seven years. A favorite bull dog, after having kept up with his master for 21,000 miles, died.

Hancock says in the introduction of his book on "Exercises for Women," that a teacher of jiu jitsu in Japan, aged 75, vanquished every competitor at this sport who appeared against him.

A Mr. Brown of Philadelphia began playing golf at 50 and at 64 won a tournament, defeating nineteen or twenty competitors, some of whom were thirty years his junior. The newspaper account of this contest says that Mr. Brown had no handicap and won solely on the merits of his play.

A contortionist, aged nearly 80, in perfect health, was looking around a few years ago to find a medical man to whom he could sell his skeleton. He had already disposed of it twice, once to a doctor in Detroit who died, and then to another in New York who had also died.

Mary Wheaton, aged 72, gave not long ago exhibitions of fancy swimming and diving at Bangor, England. She has been an expert swimmer for fifty-seven years.

One hundred thousand miles on a bicycle is the record of Thomas W. Davis of Peoria, Ill., made between the ages of 65 and 75. This includes a number of "century runs," one made when he was 73, in which he outrode a number of younger men.

William O. Greene of Milwaukee, 71 years old, frequently rides 100 miles a day on his "wheel."

"Jem" Mace, the veteran prize fighter, sparred in the ring at 80 years of age. He was noted as a total abstainer.

These are a few records, selected almost at random, from a number collected during the past dozen years or more. No doubt a systematic search would bring to light an indefinite number of similar histories. The point to be noted is that Mr. Weston's record, although remarkable, is by no means unattainable by any faithful pedestrian who is willing to pay the price (1) by long years of constant effort in perfecting

himself as a pedestrian; (2) by great abstinence and self-denial, and (3) by sufficient confidence in his own almost limitless powers. Most men lie down and die, not knowing what they are capable of, either mentally or physically. Mr. Weston says that in 1870, when he was preparing to walk 100 miles in twenty-four hours Horace Greeley said to him that it was wicked to encourage him in such an effort, and added: "You are young and spry now, but wait until you are 50 years old and then you can not walk 40 miles a day." No doubt that worthy editor thought he was performing a solemn duty in trying to prevent the rash young man from doing himself a permanent and irreparable injury. Do not wise people still shake their heads and allude to the terrible consequences to be expected in after years if anyone should "over-exert himself" or get too tired?" The very indefiniteness of these terms seems to add to their mental picture of the disasters that will follow the disregard of their warnings.

Revolutionary as it may seem, I am prepared to maintain that Mr. Weston, "Jem" Mace, Mr. Cleveland and all the others I have mentioned, have actually lived longer than they otherwise would have done, by reason of their bodily exercises, and not in spite of them. There is no question that college athletes are longer lived than the non-athletic scholars, and if you say that is because they are stronger to begin with than their more sedentary brethren, I deny that. Mr. Weston, like Sandow, Blaikie, Mr. Roosevelt, Dr. Winship and many others, went into physical exercises because they were sickly as boys, and not for pastime.

Fortunately, people are at last beginning to wake up to the paramount necessity of educating and developing the body, and are beginning to perceive that while we are wasteful of many things, we are not so wasteful of any other thing as we are of our own and our children's lives; and, by the way, is it not time that we should drop the use of that unscientific limit to human life so beautifully stated in the Ninetieth Psalm, as it evidently has only a poetical meaning? For that matter, there is just as good biblical authority for placing the limit of our days at 120 years as at 70 years (see Genesis, Chap. vi:3). The former figure, moreover, nearly accords with present scientific opinion as to the length human life should attain than does the latter.

The ignorance and prejudice that surround these all-important questions can scarcely be dispelled until they are approached in a more rational and scientific spirit. While the influence of "the wise old lady next door" is somewhat diminished in clinical medicine, she is still much in evidence in preventive medicine and personal hygiene, as shown, for example, by Mr. Greeley's remarks just quoted in regard to the sad condition in which Mr. Weston would find himself at 50, if he should persist in his dangerous practice of walking. However, the light is slowly breaking as Parkes puts it: "As ages roll on, hope does in some measure grow. In the midst of all our weaknesses, and all our many errors, we are certainly gaining knowledge, and that knowledge tells us in no uncertain language, that the fate of man is in his own hands."

RICHARD COLE NEWTON, M.D., Montclair, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TUBERCULOSIS—A BACTERIEMIA?

To the Editor:—In connection with the editorial in THE JOURNAL June 19, 1909, on the theory of tuberculosis as a bacteriemia, in which the results of Forsyth in confirmation of the work of Rosenberger are discussed, as well as Rosenberger's observations, I wish to call attention to a paper by Burnham and Lyons read before the Louisiana State Medical Society, May 4-6, 1909, in which the results of study of ten cases of tuberculosis by the staining methods of Rosenberger, in every case, gave negative results. I note in THE JOURNAL, Aug. 21, 1909, that Ravenel and Smith presented a paper before the Wisconsin State Society in which eighteen cases were studied in the same way with negative results. This subject is one of great interest and in view of the contradictory reports of the observers quoted I think that the question can well be considered doubtful as to whether or not tubercle bacilli are really present in the blood stream. I would like to ask if any other investigators have confirmed or failed to confirm the observations of Rosenberger?

M. P. BURNHAM, Harrisonburg, Va.

ANSWER.—Our correspondent and others may be interested in an article entitled "Tests Concerning Tubercle Bacilli in the Circulating Blood," in the *Archives of Internal Medicine*, August, 1908, iv, 133. The authors, E. C. Schroeder and W. E. Cotton, examined microscopically the blood of forty-two tuberculous cows and bulls, but failed to find tubercle bacilli. The blood from the tuberculous cattle was injected into eighty-eight guinea-pigs, also with negative results.

AIDS TO OBSTETRIC TRACTION BY THE PATIENT

To the Editor:—Sometimes a simple device is of great benefit to humanity. For twenty-four years I have practiced obstetrics: the first four years were times of labor indeed. Any physician who has attended a good strong woman in the second stage of labor, who meant business, and who wished to have her husband, nurse or neighboring women pull on her hands while she was doing her best to expel the presenting head, would, it seems to me, welcome the following simple labor-saving device: (1) Take a towel at least 26 inches long and 14 inches wide and catch it by diagonal corners with the thumb and fingers; (2) twist it into a rope; (3) tie the diagonal corners with a square knot—the towel is then converted into a ring with a diameter of 7 inches; (4) fix another towel like the first; (5) place the patient, after the first stage of labor, in the dorsal or lateral prone position with the legs flexed on the thighs; (6) place the rings over the knees and insist that the patient grasp a ring with each hand, while the nurse or some one else keeps the rings from slipping off the knees. The patient is then instructed to pull and hold the breath at the same time. She will recognize after a pain or two, that the rings afford her great comfort, and are an appreciable help in advancing the labor. The use of these rings inspires the patient with confidence in her own strength and her ability to terminate the labor. This device also saves the people in waiting much fatigue, as well as saving the patient from being dragged all over the bed. The device is simple, and always at hand. I have never seen this simple device mentioned in literature.

FRANK DEWITT REESE, Cortland, N. Y.

ANSWER.—In obstetric cases, physicians frequently have to improvise some such simple apparatus as that described above. Instead of flexing the knees on the thighs the towels may be placed around the patient's legs, just above the knees, so that she may grasp them as is here suggested and no one need hold them. Another method frequently used is to twist a sheet cornerwise and put it over the crossbar at the foot of the bed, put knots on the ends and let the patient pull on the sheet. Various other simple methods are in common use as well as patented tractors of straps and loops which are more or less complicated. If it will comfort the patient to have something human to hold in place of the effective sheet-rope, let the husband or some one else assist her, but if the medical attendant has tact and firmness it is seldom necessary for him to use up his time and strength in helping the patient pull. Our correspondent does not mention the danger that the physician may be so tired and his hands so lamed that he can not give the strength and skill necessary in some complication such as dystocia, retained placenta, hemorrhage, or asphyxia.

NEED OF A SECTION ON PSYCHIC FORCES

To the Editor:—I applaud the call made by Dr. G. Betton Massey, (THE JOURNAL, July 31, 1909, p. 394) for the establishment of a new "Section on Physical Forces in Medicine and Surgery," and offer an amendment that the new Section embrace the psychic as well as physical forces. I would ask an expression of opinion from the profession.

There is on the part of the people so much unrest and insurrection over the inefficiency of drug therapy which has been indiscriminately prescribed with little or no benefit in a large and rapidly increasing number of cases of nervous disorders that continued neglect of the more effective psychic and physical forces for the cure of these disorders will bring disaster to the profession and to the community at large.

Although the development of the psychic forces would perhaps more logically belong to the Section on Nervous and Mental Diseases, the members of that Section have told us so plainly that they are too busy to give the attention to the subject which its importance demands that we must look to new men to develop it, and besides it is a subject on which the general practitioner of the future will have to be educated, and, all things considered, I believe that the best possible way to develop the psychic and physical forces which will in the future play an increasingly important part in the healing art is to organize a new Section, which in my judgment will not be lacking in earnest work and hearty support at any meeting.

GUSTAVUS WERBER, Washington, D. C.

CHEESE IN TREATMENT OF CELLULITIS

To the Editor:—Recently I had a case of cellulitis of the hand with badly engorged lymphatics and ascending phlegmonous manifestations. The hand was swollen, the arm brawny and swollen. I made free incisions in the hand, applied hyperemic cups and arm band, and soaked the parts for hours in hot bichlorid of mercury. The arm was getting along well, but one day I noticed it white and the skin loose and apparently bloodless. The patient said that on the entire arm he had placed the ordinary fresh cottage cheese—*Schmierkäse* of the Germans—and the benefit seemed more than that obtained from the Bier treatment, incisions and bichlorid of mercury. I would like to know from what source the benefit was derived. Unfortunately, I made no microscopic examination of the pus, but my own explanation was that the lactic and butyric acid organisms must have had an inhibitory or bacteriolytic

action on those pus organisms. Can you tell me if this is so? Is there any literature on the subject? Or did the bactericidal serum or opsonins of the body simply overcome the invading organisms? Cheese is a household remedy among the Slavs for pneumonia, erysipelas and any local infection, and, strange to relate, it works.

C. E. MCDERMID, Charleroi, Pa

ANSWER.—The application of cheese is of little if any benefit. It is true that fresh green cheese contains many lactic acid bacteria, but usually the ordinary kind; and it would be rather difficult for these bacteria to reach the seat of the trouble. It is not impossible that the application of the cheese had a similar effect to that of a moist poultice. The statement that Slavs use cheese for pneumonia and erysipelas successfully is rather indefinite; many popular ideas are devoid of scientific basis and should be mistrusted. It is probable that the supposed benefit derived from application of cheese is purely coincidental.

PHOSPHORESCENT SIGNS FOR PHYSICIANS

A correspondent states that some years ago an agent sought to sell him a sign for his office to contain his name in phosphorus letters, so that in the day time it would appear as a plain white sign, but at night would shine with a phosphorescent glow. He asks the name and address of any firm that makes such signs, and we will be glad to pass the information on to him if any of our readers can inform us.

The Public Service

Medical Department of the Army

Memorandum of changes for the week ended Aug. 21, 1909:

Robbins, Chandler P., major, granted leave of absence for one month.

Reynolds, Charles R., major, granted leave of absence for 10 days.

Russell, F. F., major, ordered to proceed from Washington, D. C., to Fort Sill, Okla., and return, on business connected with the Medical Department.

Siler, Joseph F., capt., ordered to proceed from New York City to Peoria, Ill., and return, on business connected with the Medical Department.

Drake, Percy G., 1st lieut., M. R. C., ordered to proceed from Fort Ethan Allen, Vt., to Fort Leavenworth, Kan., for temporary duty.

Morse, Arthur W., major, relieved from duty at the Presidio of Monterey, Cal., and ordered to the Philippine Islands, for duty on Oct. 5, 1909.

Parce, Alexander D., 1st lieut., Wilson, James A., 1st lieut., relieved from duty with Co. C., Hospital Corps, Fort Niagara, N. Y., and ordered to the Philippine Islands for duty on Oct. 5, 1909.

Trotter-Tyler, George, 1st lieut., M. R. C., relieved from duty at Vancouver Barracks, Washington, and ordered to the Philippine Islands, on Oct. 5, 1909.

Winter, Francis A., major, Darnall, Carl R., major, Pipes, Henry F., capt., appointed members of a board of officers of the Medical Corps, to meet at the Army Medical Museum Building in Washington, at the call of the senior member of the board, for the purpose of conducting the preliminary examination of applicants for appointment in the Medical Corps of the Army.

Wickline, Wm. A., capt., granted 30 days' leave of absence.

Ekwurzel, George M., capt., granted leave of absence for three months, to take effect on his relief from duty in the Philippines Division.

Schmitter, Ferdinand, 1st lieut., granted leave of absence for four months, with permission to go beyond the sea.

Shillock, Paul, major, relieved from treatment at the Army and Navy General Hospital, Hot Springs, Ark., and will return to his proper station.

Howard, Deane C., major, granted two months' leave of absence, to take effect on his arrival in the United States.

Juenemann, George P., capt., granted 10 days' leave of absence Aug. 19.

Ames, John R., dental surgeon, accompanied by a member of the Hospital Corps, as assistant, will proceed from Fort Snelling, Minn., about Sept. 1, 1909, to the following named posts in the order given and report to the commanding officer for temporary duty during the period indicated to perform dental work for officers and enlisted men: Fort Lincoln, N. D., 15 days, Fort Assiniboine, Mont., 30 days.

Scott, Harold O., dental surgeon, relieved from duty in the Philippines Division, and on arrival at San Francisco, to report by telegraph to the Adjutant General of the Army for further orders.

Medical Corps of the Navy

Changes for the week ended Aug. 21, 1909:

Robertson, G. E., acting asst.-surgeon, ordered to duty at the Naval Hospital, Boston.

Ledbetter, R. E., surgeon, detached from the Naval Academy, and ordered to the Naval Station, Cavite, P. I.

Noble, D. H., asst.-surgeon, detached from duty at the Naval Hospital, Las Animas, Colo., and ordered to the Third Squadron, Pacific Fleet, via the *Maryland*.

Sinclair, J. A. B., asst.-surgeon, detached from the Naval Proving Ground, Indian Head, Md., and granted leave of absence for 2 weeks.

Dunn, H. A., P. A. surgeon, ordered to the Naval Proving Ground, Indian Head, Md., August 23.

Webb, U. R., P. A. surgeon, ordered to duty at the Naval Hospital, Mare Island, Cal., August 24.

Henry, R. B., asst.-surgeon, detached from the Naval Magazine, Iona Island, N. Y., and ordered to the Third Squadron, of the Pacific Fleet

Public Health and Marine-Hospital Service

List of changes for the seven days ended Aug. 18, 1909:

Glennan, A. H., asst. surgeon general, leave granted July 17, 1909, for 28 days from July 20, 1909, amended to read 25 days from July 20, 1909.

Stoner, George W., surgeon, granted 11 days' leave of absence from August 17, 1909.

Banks, Charles E., surgeon, granted 5 days' leave en route to station.

Cobb, J. O., surgeon, granted 10 days, leave of absence from Aug. 15, 1909.

Wertenbaker, C. P., surgeon, granted 1 month's leave of absence from Aug. 16, 1909.

Lavinder, C. H., P. A. surgeon, directed to proceed to Peoria, Ill., on special temporary duty.

Parker, Herman B., P. A. surgeon, granted 15 days' leave of absence from Aug. 16, 1909.

Ramus, Carl, P. A. surgeon, granted 1 day's leave of absence, July 11, 1909, under paragraph 191, Service Regulations.

Goldberger, Joseph, P. A. surgeon, granted 1 day's leave of absence en route to station.

McCoy, G. W., P. A. surgeon, directed to make certain inspection trips in Contra Costa and adjacent counties in California on special temporary duty.

Ebersole, R. E., P. A. surgeon, granted 2 months' leave of absence from Aug. 12, 1909.

McKeon, F. H., P. A. surgeon, granted 4 days' leave of absence from June 29, 1909, under paragraph 191, Service Regulations.

Chapin, C. W., asst.-surgeon, directed to proceed to Portland, Ore., on special temporary duty.

Bean, L. C., acting asst.-surgeon, granted 5 days' leave of absence from Aug. 15, 1909.

Cross, I. J., acting asst.-surgeon, granted 30 days' leave of absence from Sept. 9, 1909, with pay, and 13 days from Oct. 9, 1909, without pay.

Fablan, J. J., acting asst.-surgeon, granted 6 days' leave of absence from Aug. 2, 1909, under paragraph 210, Service Regulations.

Hamilton, H. J., acting asst.-surgeon, granted 2 days' leave of absence from Aug. 16, 1909.

Townsend, W., acting asst.-surgeon, granted 14 days' leave of absence from Aug. 8, 1909.

Walkley, W. S., acting asst.-surgeon, granted 4 days' leave of absence from Aug. 25, 1909.

BOARDS CONVENED

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Aug. 16, 1909, for the purpose of making a physical examination of two officers of the Revenue-Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; P. A. Surgeon M. K. Gwyn, recorder.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Aug. 20, 1909:

SMALLPOX—UNITED STATES

Louisiana: New Orleans, July 31-Aug. 7, 1 case.
Montana: Butte, July 31-Aug. 7, 3 cases.
Oklahoma: Oklahoma City, July 31-Aug. 7, 1 case.

SMALLPOX—FOREIGN

Brazil: Bahia, June 11-25, 6 cases, 1 death; Rio de Janeiro, June 26-July 11, 8 cases, 2 deaths.
China: Amoy, July 3-10, 1 death; Shanghai, June 19-26, 1 case.
Egypt: Cairo, June 24-July, 1 death; Suez, June 18-24, 2 cases, July 1-8, 2 cases.
France: Paris, May 28-June 5, 7 cases, July 17-24, 2 cases.
India: Bombay, June 29-July 6, 4 deaths; Calcutta, June 19-26, 8 deaths; Madras, June 26-July 2, 1 death.
Italy: General, July 18-25, 12 cases; Naples, 39 cases, 5 deaths.
Mexico: Mexico City, July 3-10, 11 deaths; Monterey, July 23-Aug. 1, 1 death.
Portugal: Lisbon, July 24-31, 7 cases.
Russia: Libau, July 18-25, 1 case; Riga, July 11-24, 7 cases; St. Petersburg, July 3-10, 16 cases, 3 deaths; Warsaw, June 5-12, 2 deaths.
Siam: Bangkok, June 1-30, 1 case.
Siberia: Vladivostok, May 27-June 3, 2 cases, 1 death.
Spain: Vigo, July 18-24, 1 case.

YELLOW FEVER

Brazil: Bahia, June 11-25, 9 cases, 5 deaths.
British Guiana: Suddie, July 22, 1 case, 1 death.

CHOLERA—INSULAR

Philippine Islands: Manila, June 19-26, 76 cases, 50 deaths.

CHOLERA—FOREIGN

China: Amoy, July 3-10, 25 deaths.
India: Bombay, June 29-July 6, 12 deaths; Calcutta, June 19-26, 55 deaths; Rangoon, 2 deaths.
Russia: General, exclusive of St. Petersburg, July 23-30, 346 cases, 136 deaths; St. Petersburg, 390 cases, 165 deaths.

PLAGUE

Brazil: Bahia, June 11-25, 8 cases, 5 deaths; Rio de Janeiro, July 4-11, 1 case.
China: Amoy, July 3-10, 79 deaths; Hongkong, June 19-July 3, 7 cases, 7 deaths.
Ecuador: Guayaquil, June-July 10, 3 deaths.
India: General, June 26-July 3, 553 cases, 478 deaths; Bombay, June 29-July 6, 23 deaths; Calcutta, June 19-26, 48 deaths; Rangoon, 33 deaths.
Japan: Kobe, July 10-17, 3 cases, 2 deaths.
Siam: Bangkok, June 1-30, 12 cases, 12 deaths.
Venezuela: Caracas, July 17, 2 cases, July 31, 1 case.

Book Notices

HYDROTHERAPY. A Brief Summary of the Practical Value of Water in Disease. By William H. Dieffenbach, M.D., Professor of Hydrotherapy, New York Homeopathic Medical College and Flower Hospital. Cloth. Pp. 267, with illustrations. Price, $3. New York: Rebman Co.

The first half of this book is devoted to the general principles of hydrotherapy, and to a description, with many excellent photographs, of the apparatus and technic of hydrotherapeutic procedures. The second half is devoted to the practical application of hydrotherapy to diseases. Dr. Dieffenbach is an enthusiastic believer in "the cure of disease by water." In his introduction to the practical part of the book he says: "Although convinced of the almost universality of these applications we do not desire to be classed among those who in their zeal announce hydrothermotherapy as a panacea or cure-all. There are few abnormal conditions where *some* modality of hydrothermo-therapeutics is not called on to do yeoman service. The triumphs of hydrotherapy in fevers, especially in typhoid fever, where hydrotherapy has succeeded in penetrating the citadel of conservatism and of traditional medicine which has hampered the progress of the art of healing for ages are alone sufficient to convince the most skeptical among physicians of the virtues of water in disease." A clean-cut, concise, definite, short yet lucid and comprehensive treatise on this subject is indeed welcome. The present work is all of this—it is written by a master. And yet one can not help but feel that Dr. Dieffenbach in his sincere enthusiasm has materially detracted from the value of his work because of the very "almost universality" that he attributes to hydrotherapeutic procedures. Perfectly satisfied as we are that hydrotherapy has a very wide and very valuable range of usefulness in the art of healing, we are a little skeptical when disease after disease is mustered before us and "*some* modality of hydrothermo-therapeutics" is applied to it, or, as it seems to us at times, even forced on it. It seems to us a far cry from the well-recognized results of hydrotherapy in typhoid to such recommendations as "short cold half baths" with friction as *the* treatment of anemia and chlorosis, with no reference to iron; or to the use of the "iced compress to the vulva, with efficient vaginal packing and mechanical pressure" for the treatment of postpartum hemorrhage, etc. The following quotation in full giving the treatment of membranous croup, will illustrate what has been said:

"This fatal affection requires correct diagnosis, and prompt intervention by the physician. The indications for treatment require clearing the parts of the false membrane, preventing spasms of the glottis and keeping up the resisting power of the child. Moist heat, applied by means of the vapors of the 'croup kettle,' tends to produce local leucocytosis and hyperemia and loosens the membrane. Hot foments applied over the larynx and trachea and changed five times hourly, to be followed by the cold, stimulating compress, will act beneficially. Warm baths, with cold affusions applied every five minutes to the nape of the neck until a vigorous respiratory reaction with cough is induced, have also produced expectoration of the membrane." Such paragraphs, and especially the last sentence, do not appeal to one who has been accustomed to give antitoxin. The book is written from the standpoint of the hydrotherapeutist, as is evident from its substance and also from the titles of the author. Its appeal will be rather to the physician who specializes in institutional hydrotherapeutics, etc., than to the ordinary practitioner of medicine who believes in hydrotherapy as a most valuable adjuvant rather than as a system of therapeutics in itself. The book is nevertheless a valuable and comprehensive summary of the whole subject of hydrotherapy.

CONFESSIONS OF A NEURASTHENIC. By William Taylor Marrs, M.D. Cloth. Pp. 114, with illustrations. Price, $1. Philadelphia: F. A. Davis Co.

This interesting bit of satire may serve to arouse some persons who are nursing their own alleged invalidism and may shed light on the conduct of friends who often unwittingly pander to hysteric conditions. If Dr. Marrs has omitted any symptoms in his fanciful portrayal, they fail to occur to us at the present moment.

THE EMMANUEL MOVEMENT IN A NEW ENGLAND TOWN. By Lyman P. Powell, Rector of St. John's Church, Northampton, Mass. Cloth. Pp. 194, with illustrations. Price, $1.25. New York: G. P. Putnam's Sons, 1909.

Mr. Powell is one of the leading workers in the so-called Emmanuel movement and may be accepted as one of the expositors of what it claims to accomplish. According to him, "every Emmanuel clinic works within the limitations set by scientific medicine," but he follows this by the statement that "every Emmanuel worker follows his own temperament and training in the application of the principle." Here lies the peril and the basis for the criticisms which have been rather numerous both from physicians and clergymen. There is no question but that a religious stimulus is of great value in many forms of mental and even bodily ailment; a thorough medical education would be of great value to many clergymen and some physicians probably suffer on account of their lack of religious faith and training. The debatable ground, however, between moral and physical healing is full of pitfalls for the injudicious and we fear that anything like a healing cult, such as the Emmanuel movement appears to be developing into, is full of perils to the church as well as to the public welfare generally. Not every clergyman is possessed of proper balance and judgment to go beyond the limits that have usually been set to his functions and the tendency to conscious or unconscious fakerism is likely sooner or later to appear if the practice is to spread. Even with the advice of physicians cooperating with the minister there are dangers. The most fatal form of organic insanity in the active period of life is often indistinguishable in its earlier stages from neurasthenic conditions. Mr. Powell does not seem altogether free from undue credulity. His statement as to the effects of the reading of the twenty-third chapter of Dubois' well-known work seem to us somewhat like evidence of this. His ideas of hypnotism do not appear very well defined, and we are not sure that his methods are not as perilous as other more obviously objectionable ones. His book, therefore, is not altogether a safe one to follow in this regard. What will be the outcome of this Emmanuel movement we are not prophets enough to say; it may do no harm, but it looks to us more perilous to the church than to medicine if it is to be taken up by enthusiastic and more or less credulous clergymen to any very great extent.

SEVENTH ANNUAL REPORT OF THE DIRECTOR OF THE BUREAU OF SCIENCE, to the Honorable, the Secretary of the Interior. By Paul C. Freer, Director of the Bureau of Science, for the Year Ending Aug. 1, 1908. Paper. Pp. 79. Manila.

The part of this report of interest to medical men is the space given to the Philippine Medical School. This school is organized with a faculty composed partly of clinical instructors who teach while practicing their profession, partly of men devoting their time exclusively to instruction and research, and of others who belong to the staff of the Bureau of Science, and whose salaries are paid by that bureau. The result is that there is some conflict between the demands made by the school on the one hand and the bureau on the other. The situation is complicated by the fact that the men belonging to the laboratory staff are compelled to give much of their time to clinical work and the organization of the hospital and the school. The report suggests that the government should appoint independent clinical professors who should care for the patients, leaving the laboratory men free to pursue their important investigations. The total number of students in the school is 67. The question of admission requirements is discussed and the fact that the authorities have been quite lenient in applying these requirements is explained by the necessity of providing as soon as possible trained native physicians who will be able to advance the hygienic work in the islands and interpret the requirements of the government to their countrymen with a belief in their necessity. The report emphasizes the necessity of carrying on, in addition to work in Manila, research and practical work in the provinces. For this it is proposed to use the opportunity afforded by the periodic segregation of lepers to be sent to the Culion leper colony. Interesting cases found at these meetings should be brought to Manila for investigation. The other portions of the report are also of considerable interest and show that the worthy standard set by the Philippine Bureau of Science is being maintained.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: State House, Des Moines, September 21-23. Sec., Dr. Louis A. Thomas.

MISSOURI: Kansas City, September 20-22. Sec., Dr. J. A. B. Adcock, Warrensburg.

NEW YORK: Albany, September 21-24. Chief of Examinations Division, Charles F. Wheelock, Albany.

MASSACHUSETTS: State House, Boston, September 14-16. Sec., Dr. Edwin B. Harvey.

The Preparation for the Study of Medicine

An article bearing the above title by Dr. Frederic T. Lewis of Harvard Medical School appears in the *Popular Science Monthly*,[1] and is worthy of careful reading by those having to do with medical education.

Dr. Lewis names subjects which the student during his preliminary college course should take up and gives reasons why they are of importance. The subjects recommended are zoology, botany, chemistry, physics, mathematics, psychology, French and German, English literature and drawing. In zoology, the value of the biologic methods, including dissection and microscopic technic, is emphasized. A table is given based on examinations in anatomy and histology, held by Harvard Medical School for the class which entered in 1907. This table shows that the highest averages were obtained by the students who had previously studied zoology. In botany a study of the morphology of plants with special reference to the fungi is recommended because of the aid it gives in the study of bacteria. The study of flowering plants, however, is not recommended.

The value of the study of chemistry, general and organic, is emphasized because of the aid in the future study of physiology and physiologic chemistry. A college course in physics "with laboratory work consisting of accurate measurements" is recommended as a valuable preparation for the study of physiology and its bearing on numerous problems of medicine. In mathematics, Dr. Lewis shows that plane geometry and plane trigonometry are essential to the securing of the desired preliminary course in physics and that for advanced physics, solid geometry and higher mathematics are needed. A knowledge of psychology is important, particularly in the study of nervous diseases and psychiatry. A half course in psychology, therefore, is recommended.

The reading knowledge of French and German is important in order that the student may benefit from the large number of medical books and periodicals published in those languages and which are invaluable to the student, the practitioner and the investigator. The study of English literature is recommended, not only because of its utilitarian value, but also as a source of recreation and diversion from specialized scientific studies. Drawing is valuable in developing accuracy of observation, since the very act of drawing or modeling an object calls attention to many details otherwise overlooked.

While all this may be secured in two years of collegiate work, it is recommended that students who can possibly do so should take the complete college course before beginning the study of medicine.

South Carolina June Report

Dr. Harry H. Wyman, secretary of the State Board of Medical Examiners, reports the written examination held at Columbia, June 8-10, 1909. The number of subjects examined in was 18; total number of questions asked, 85; percentage required to pass, 75. The total number of candidates examined was 81, of whom 46 passed and 33 failed. One candidate did not complete the examination. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Howard University, Washington	(1909)	79.
Medical College of Georgia	(1909)	75.2, 81.4
Atlanta College of Physicians and Surgeons	(1908)	80.5
University of Maryland	(1907) 85.4; (1908) 75.2, 81.6; (1909) 78.7, 80.2, 82.1, 82.2.	
Louisville and Hospital Medical College	(1908)	77.1
Columbia University, College of Phys. and Surg.	(1906)	81.5
North Carolina Medical College	(1909)	76.2, 83.9
Jefferson Medical College	(1908)	84.2
Medical College of the State of South Carolina	(1909) 75, 75, 75, 75.5, 75.6, 75.7, 75.7, 76.9, 78.6, 78.9, 79.4, 80, 80.6, 80.9, 81.5, 82, 82, 82.4, 83.2, 83.9, 84.2, 84.7, 84.9, 87.2.	
Meharry Medical College	(1908) 75; (1909)	79.1
Vanderbilt University	(1909)	76.1
University of Nashville	(1909) 75,	81.6
Medical College of Virginia	(1908)	90.9

FAILED		
Howard University	(1907)	69.3
Birmingham Medical College	(1908)	68.2
Medical College of Georgia	(1906) 63; (1908) 60, 60.9, 62.5,	66.
University of Louisville	(1908)	71.5
Baltimore Medical College	(1907)	66.
University of Maryland	(1909)	69.4
Leonard Medical School	(1906) 55.5; (1908) 63.8, 73.4; (1909) 63.4.	
Medical College of the State of South Carolina	(1904) 58.6; (1907) 63.6; (1908) 22.8, 66.7; (1909) 56.5, 59.6, 64.9, 68.1, 70.2, 71, 71.2, 71.4, 72.1, 72.1	
Meharry Medical College	(1907) 61.1; (1909) 64.1,	65.
University of Nashville	(1909)	68.9
University of the South	(1908)	52.9

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Marriages

R. P. COWLES, M.D., to Miss Sarah C. McConville, at Baltimore, August 6.

OTTO FISHER, M.D. ,Trenton, N. J., to Miss Mollie Nash, at Reisterstown, Md., August 14.

HENRY STRONG DENISON, M.D., to Miss Jeannette Welch, both of New London, Conn., August 19.

GIUSEPPE PREVITALI, M.D., New York City, to Miss Rose R. Morrow, at Windsor Hills, Md., August 8.

SWITHIN CHANDLER, M.D., Philadelphia, Pa., to Miss Elizabeth Dickenson of Middletown, Conn., July 31.

DANIEL B. REDMOND, M.D. to Miss Eva Fewell, both of Washington, D. C., at Rockville, Md., August 11.

ANTHONY GRUESSNER, M.D., New Brunswick, N. J., to Miss Piozsika Deutsch, of New York City, August 14.

Deaths

Walter Gilman Curtis, M.D. Harvard Medical School, Boston, 1846; acting assistant surgeon in the Army before the Civil War, and medical quarantine officer of the Cape Fear river thereafter; state quarantine physician for nearly 30 years; in 1868 clerk of the superior court of Brunswick county, N. C.; and for many years a magistrate and member of the board of county commissioners; died at his home in Southport, N. C., August 8, aged 83.

Henry G. Christzman, M.D. Pennsylvania Medical College, Gettysburg, 1859; surgeon in the Army during the Civil War, and in charge of the Hagerstown (Md.) Hospital during and after the battle of Antietam; for many years a U. S. pension examining surgeon at Washington; ex-president and an honorary member of the Medical Society of Franklin County; died at his home in Welsh Run, Pa., August 10, from paralysis, aged 72.

Byron Clark, M.D. University of Maryland, Baltimore, 1881, College of Physicians and Surgeons, Baltimore, 1881; formerly professor of theory and practice of medicine in the Eclectic Medical College of the City of New York; died at his home in Washington, Pa., August 5, from diabetes, aged 72.

William Smith, M.D. Cleveland Medical College, 1848; Columbus Medical College, 1876; a veteran of the Mexican and Civil Wars; and for many years a member of the American Medical Association; died at his home in Van Wert, Ohio, August 8, from heat exhaustion, aged 87.

James P. Rorex, M.D. University of Alabama, Mobile, 1875; died at his home in Scottsboro, Ala., August 8, from a gunshot wound of the heart, supposedly self-inflicted, while despondent on account of ill-health, aged 64.

John Jacob Beyer, M.D. Jefferson Medical College, Philadelphia, 1890; a member of the Medical Society of the State of Pennsylvania; died at his home in Philadelphia, August 9, from locomotor ataxia, aged 51.

Louis Jacob Eger, M.D. Starling Medical College, Columbus, Ohio, 1893; a specialist on diseases of the eye, ear, nose and throat; died at his home in Delphos, Ohio, August 4, from cerebral meningitis, aged 41.

William Forrester, M.D. University of Louisville (Ky.), 1862; surgeon of the Fifth Kentucky Volunteer Cavalry during the Civil War; died in Louisville, August 15, aged 72.

Stanley Theodore Boggess, M.D. Bellevue Hospital Medical College, New York City, 1891; of Bristol, W. Va.; died in a hospital in Clarksburg, W. Va., August 5, from tetanus, aged 47.

Pleasant James Monroe Burket, M.D. University of Michigan, Ann Arbor, 1865; a veteran of the Civil War; died at his home in Topeka, Kan., July 3, from heart disease, aged 65.

Marcellus M. Adams, M.D. Medical College of Indiana, Indianapolis, 1885; a member of the Indiana State Medical Association; died at his home in Greenfield, August 5, aged 75.

Kent Black, M.D. Medical College of Virginia, Richmond, 1878; a member of the Medical Society of Virginia; died suddenly on his farm near Blacksburg, Va., August 12, aged 53.

William R. Wall, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1887; died suddenly at his home in Willoughby, Ohio, August 7, from cerebral hemorrhage, aged 68.

James C. Harrington, M.D. Cleveland University of Medicine and Surgery, 1865; of Brooklyn, N. Y.; died at the home of his daughter in Bellevue, Pa., July 15, aged 72.

Emanuel A. Smith, M.D. Medical College of Indiana, Indianapolis, 1892; of Newton Stewart, Ind.; died at the home of his brother in Bird's Eye, Ind., July 9, aged 62.

George Washington Hamill, M.D. Bellevue Hospital Medical College, New York City, 1876; of Baltimore, Md.; died at Mercy Hospital in that city, August 13, aged 56.

Samuel W. Yearick (license, Iowa, 1885); an eclectic practitioner of Cedar Rapids; and a veteran of the Civil War; died at his home, July 18, aged 74.

Michael C. Kett, M.D. University of Georgetown, D. C., 1904; of Glenwood Springs, Colo.; was killed August 6, in a runaway accident at that place, aged 30.

Robert Emmett Jones, M.D. Western Reserve University, Cleveland, 1884; died at his home in Bethany, W. Va., August 2, from anemia, aged 59.

John Davis Thornton, M.D. University of Kansas City, Mo., 1887; of Des Moines, Iowa; died in Kansas City, August 2, from brain disease, aged 56.

Marion M. Erwin (license, Ark., 1903); a Confederate veteran, died at his home in Newport, Ark., August, 2, from pneumonia, aged 59.

Thomas Charles Stevenson, M.D. Western Pennsylvania Medical College, Pittsburg, 1893; died at his home in Carnegie, Pa., August 6, aged 42.

Edward Cornet, M.D. National University of Illinois, Chicago, 1892; died at his home in Uncasville, Conn., from paralysis, aged 62.

George W. Baker, an eclectic practitioner of Leon, Iowa; died at his home January 10, from pneumonia, aged 87.

Thomas D. Hulme (license, practitioner, Iowa, 1886); died at his home near Commerce, Iowa, August 8, aged 68.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Medical and Chirurgical Faculty of Maryland Establishes a Permanent Relief Fund

The July number of the *Bulletin of the Medical and Chirurgical Faculty of Maryland* contains the report of the committee on a fund for the relief of widows and orphans of deceased members, showing the work which has been accomplished during the past year. This fund, established in 1903, has been steadily growing and has recently been considerably enlarged through the organization of the Ladies' Auxiliary. Dr. Eugene F. Cordell, the chairman of the committee, gives the following account of its establishment and activities:

Several times in the long life of the Faculty, extending back to the eighteenth century, the matter was discussed and at different times resolutions adopted, to carry the plan into execution, but it was not until 1903 that it was successful. At the annual meeting of the Faculty, held in Baltimore in April of that year, a resolution was adopted founding a permanent fund for the relief of the widows and orphans of deceased members. This fund was placed in the hands of the committee to invest and to use the annual interest for the relief of those who might be in need of it. Personal effort was needed to make the project a success. Solicitation among friends and members of the profession secured several hundred dollars within the first year. While the fund has not increased as rapidly as it should, it is growing and is safely invested in 5 per cent. bonds. The goal which the committee has in view is the securing of an amount which will yield an annual income of at least $1,000. There is little doubt that before long, as the charity becomes known and appreciated, gifts and bequests will come in which will make its work an important part of the activities of the Faculty. It is the hope of the committee to establish somewhere near Baltimore a home for the widows and orphans of physicians, where they can be cared for and where the children can be educated. It seemed to the committee that if the women of the Faculty, the wives, sisters, mothers and daughters of the 1,100 members, could be interested in this work, it would be prosecuted with greater success. The recent dedication of the fine new building of the Faculty offered an opportunity to carry this idea into execution. The brilliant opening of May 13-15 drew the community and especially the ladies together, and made them see what a powerful body the medical profession was under its new organization. The local newspapers were full of our career and work and the project was well advertised as a result. Accordingly, a Ladies' Auxiliary of the Widows and Orphans Fund was organized, making the women, in a measure, members of the Faculty. They entered on their work with enthusiasm, a large membership committee having been appointed to secure the membership of all the ladies. In October, an entertainment will be held in Osler Hall, at which reports of the work of the Ladies' Auxilary will be made. A large number of the wives and daughters of members of the Faculty are taking an interest in the plan. It is hoped that eventually a permanent home may be established, which will offer its hospitality not only to the widows and orphans of physicians, but also to the superannuated physicians themselves.

The work outlined above is most commendable, and the result in Maryland will be watched with interest. State associations can well give such a plan careful consideration in selecting possible lines of development.

Society Proceedings

COMING MEETINGS

Amer. Assn. Obstetricians and Gynecologists, Ft. Wayne, Ind., Sept. 2.
Amer. Electrotherapeutic Association, New York, September 14-16.
Colorado State Medical Association, Estes Park, September 19.
Michigan State Medical Society, Kalamazoo, September 15-16.
Missouri Valley, Med. Society of, Council Bluffs, Ia., September 9-10.
New Mexico Medical Society, Roswell, September 15-16.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
Utah State Medical Association, Ogden, September 21-22.
Wyoming State Medical Society, Cheyenne, September 1-2.

OREGON STATE MEDICAL ASSOCIATION

Annual Meeting held at Seattle, July 20-23, 1909

The President, DR. W. H. BYRD, in the Chair

The officers elected were named in THE JOURNAL, Aug. 7, 1909, p. 467.

The report of the secretary showed a membership of 371. This included one new society, the Polk-Yamhill, of which Dr. W. G. Gilstrap is president and Dr. L. A. Bollman, secretary. The state association granted a charter to this society.

Practice Act Discussed

The Committee on Public Policy and Legislation endorsed a plan for the consideration of a practice act, as a special order of business for the next meeting. The model bill presented in the state legislature at the last session had been defeated, and it was with a view to passing this that the motion was made. The bill was widely discussed at the meeting.

Ophthalmia Neonatorum

DR. J. F. DICKSON, the Oregon representative of the committee on Ophthalmia Neonatorum of the American Medical Association, urged the appointment of a special committee of three to secure the passage of a bill regulating the practice of

physicians and midwives in the care of new-born infants. The matter was referred to the Committee on Public Policy and Legislation, who will be urged to adopt the plan.

Official Journal Considered

The important business of the session was the adoption of an official journal. The Committee on Journal, Drs. W. T. Williamson, C. J. Smith and K. A. J. Mackenzie, appointed last year to consider the best methods of publication, endorsed a plan for the formation of a Northwest Publishing Association and presented articles of incorporation, constitution and by-laws. *Northwest Medicine*, published at Seattle, and for several years official journal of the Washington State Medical Association, had offered to lease its plant to the states entering into the agreement, and it was recommended that this journal be made the official organ of the states of the Pacific Northwest. According to the plan recommended each state medical association will elect three trustees, and the trustees from all the states will elect an editor-in-chief and managing editor, forming a publishing company to be known as the "Pacific Northwest Publishing Association." Each state will have two associate editors and the state secretaries will become assistant editors *ex-officio*.

The journal will continue to be known as *Northwest Medicine*, and will be furnished to each member by the state associations. As at present arranged, the new publication will prove a most desirable one. The Oregon State Medical Association adopted the plan, as did also the Washington State Medical Association. Idaho is expected to do likewise, and it is hoped that British Columbia willl join in the plan. Much satisfaction is being expressed by physicians of the Northwest, who thoroughly approve the arrangement, which will go into effect immediately.

Report of Delegate to American Medical Association

The delegate to the American Medical Association, Dr. A. C. Smith, reported the results of his observations while attending the last meeting of the American Medical Association. He made a motion that the next delegate from the Oregon State Medical Association be instructed to promote legislation tending to carry out the suggestions of President Burrell advising the segregation of the three offices of secretaryship, managership and editorship of THE JOURNAL of the American Medical Association, and that he also be instructed to initiate or support any action tending toward the restriction of the term of office of the members of the Board of Trustees to one term. This motion was carried.

Northwest District Association Formed

The chairman appointed a committee of three, Drs. N. Moliter, La Grande, W. G. Gilstrap, Sheridan, and W. T. Williamson, Portland, to consider the advisability of forming a northwest association comprising Oregon, Washington, British Columbia and Idaho. The project was favorably reported and organization effected (as already noted in THE JOURNAL).

The three journal trustee nominees, Drs. W. T. Williamson, C. J. Smith and K. A. J. MacKenzie, were elected unanimously to serve in order named for one, two and three years respectively.

The next place of meeting will be Portland, Oregon, in 1910.

NEW JERSEY STATE MEDICAL SOCIETY

Annual Meeting held at Cape May, June 23-25, 1909

(Concluded from page 650)

Medical Expert Testimony

DR. T. P. PROUT, Summit, protested against the present methods of judicial procedure, and said that unless one's knowledge dated from the seventeenth century, one was of very little importance in a court of law. The venerable question always propounded whenever insanity was in question ignored completely the advances that had taken place in two centuries of medical practice. The slow administration of justice was a characteristic of bad civilization; for it meant a costly administration. He did not consider our penal system adapted to cure criminals, who were always abnormal. He hoped that the day might come when an improvement would be made in the present legal system, and the prison would become the laboratory of an active science of jurisprudence. He stated that any three physicians who had had training in a certain department would be able to come to an agreement, provided they had access to all the facts, and suggested a plan by which the medical experts should be appointed in such a way as not to be bound to testify in favor of one side or the other.

DISCUSSION

DR. BRITTON D. EVANS, Graystone Park, said that medical experts could not be criticised for not always being harmonious, as the eminent men who had just spoken on the subject of obstetrics did not seem to be by any means altogether agreed. He stated that the objection to changing the system of employing medical expert witnesses was that the Constitution of the United States guaranteed to an accused citizen the right to summon experts from anywhere who would tend to help his cause. Men appointed as experts with a life tenure would not always agree. That a life tenure did not insure agreement had been shown by the Dred Scott decision.

DR. E. ILL thought that when the day came that there would be no difference of opinion among physicians, there would be no physical body. He said that Dr. Prout's paper should be widely circulated among medical men, so that honest members of the profession might endeavor to have revised this cumbersome machinery of the law. He believed that if the asking of hypothetical questions could be abolished, this would constitute a long step in the right direction. He stated that no countries except Great Britain and the United States allow witnesses to be insulted by the attorneys without rebuke.

Pathognomonic Signs Relating to Appendix Localization

DR. A. J. WALSCHIED, Union Hill, stated that besides pain, muscular rigidity, tenderness, tumor, etc., there were a number of signs that, if carefully studied, could localize the appendix, its direction and, in a great many instances, its pathologic state and prognosis. He considered the normal position of the appendix, and how it could be placed in these various positions. The positions of the appendix, he said, were: (1) the intrapelvic, with the development of the bladder, rectal, and uterine adnexa symptoms; (2) near the iliopsoas muscles, producing leg symptoms; (3) the position upward, outward, and backward, producing lumbar pains in chronic cases; and (4) upward and inward, or under the liver, producing respiratory symptoms. He touched on the importance of pain in relation to localization, particularly in outward and upward locations, or in inward, pointing toward the median line. Tenderness, as an important factor in localization, was also referred to; as well as the significance of McBurney's point, in making a fine diagnosis of the position and condition of the appendix. The importance of gastrointestinal disturbances was next described. Pain and tenderness he considered of value in showing the degree of inflammation.

DISCUSSION

DR. GEORGE W. J. SOMMERS, Trenton, said that the diagnosis in most cases depended on the position occupied by the appendix. Those in which the tip pointed toward the other side of the colon were favorable for operation; while those in which it turned inward were more serious. He considered a study of the blood count an aid in the diagnosis of appendicitis, particularly a differential leucocyte count. He thought that the patients should be operated on as soon as the diagnosis was made, and considered a dose of castor oil a very good temporary expedient in cases of doubt. He believed, also, in the starvation plan of treatment in so-called inoperative cases. He had seen patients thus treated live long enough to be operated on successfully at a subsequent time.

DR. THEODORE SENSEMAN, Atlantic City, did not believe the location of the direction in which the appendix pointed to be of any practical value. He thought that the first twenty-four hours in an appendix case would be better consumed in getting the patient ready to be operated on than in taking a leucocyte count. If one found the base of the appendix, it was easy enough to reach the tip.

DR. J. M. RECTOR, Jersey City, referred to cases in which the appendix is sympathetically connected with the uterine adnexa, primary inflammatory changes in one of these being associated with secondary inflammatory changes in the other.

DR. WALSCHIED said that it was difficult sometimes to convince people of the necessity of early operation in appendicitis; and that in such cases one could wait and see whether, at the end of twenty-four hours, the acute pain was still present, meanwhile making the blood count and giving large doses of castor oil. While he admitted that the location of the tip of the appendix was not important to the general practitioner, he thought it very advantageous for the surgeon to know it.

Sterilization of Confirmed Criminals, Idiots, and Other Defectives by Vasectomy

DR. WILLIAM J. CHANDLER, South Orange, said that students in sociology had called attention to the fact that the birth rate of the criminal and defective classes was increasing much more rapidly than that of intelligent and law-abiding citizens. This was probably because these defectives had no sense of responsibility, and sought only the gratification of their animal natures. He referred to the famous Jukes family of criminals, prostitutes, vagabonds and paupers, to support the view that crime was hereditary. Society had sought to protect itself against the increasing number of criminals and defectives by passing punitive laws and by maintaining institutions for such persons. This had entailed considerable expense on the community, and had not been particularly successful. Some states had forbidden the marriage of persons who were epileptic, imbecile, feebleminded, or afflicted with insanity; but, unfortunately, the race could be propagated without marriage. Segregation or colonization was costly, and deprived many otherwise useful citizens of their liberty. Castration unsexed the individual; and, while advisable as an additional punishment for a limited number of criminals, was objectionable as a general measure. Vasectomy, however, was simple, safe, and thoroughly efficient. It would prevent propagation without unsexing the individual. Dr. Harry C. Sharp, of Indianapolis, for a long time chief physician of the Indiana State Reformatory, had done many hundreds of these operations, and stated that it in no manner limits the marital relations, except in the prevention of procreation. Indiana and several other states have passed laws making it compulsory for unimprovable defectives to submit to this operation.

DISCUSSION

DR. CHANDLER offered a resolution that a committee be named to prepare a bill on the lines of the Indiana law, and to present it at the next meeting of the Legislature.

DR. GEORGE H. BALLERAY, Paterson, said that we were what we were in consequence of heredity and environment. Therefore, the propagation of the human race should not be left entirely to chance. In the breeding of the lower animals, great precautions were taken to improve the stock and to prevent crossing with inferior animals. This was not so with humanity, and the result was often a progeny that was a disgrace. One of the measures that Dr. Balleray thought would be beneficial in this respect was the control of immigration. There were laws in existence supposed to do this, but they were not enforced. Dr. Balleray said that at present there were no especial means of preventing the marriage of the unfit. He thought that a law regulating this should be passed in every state, and that the applicant for matrimony should be made to pass an examination as severe as that required now of an applicant for life insurance. He thought that it should not be vasectomy, but castration that should be performed.

DR. PROUT said that the procedure should be undertaken with some trepidation, because not much was yet known concerning the ultimate effects of vasectomy. He thought that the performance of the operation on criminals would place them in a position of absolute irresponsibility; and that to allow them their liberty would cause a good deal of trouble.

DR. D. E. ENGLISH thought that the criminals were about as irresponsible now as they could be. He was not in favor of the operation for females, as it is more serious in them than in males. He believed that very few prostitutes had children.

DR. CORNELL did not think that the law in Kansas prohibiting the marriage of degenerate and unfit persons could have a fair trial until other surrounding states passed similar laws; as people who wished to be married needed only to step across the border. He said that the fact that some criminals had stated that they felt better after the operation of vasectomy did not prove it to be a good thing. He considered that the results given by Dr. Chandler lacked the accuracy of scientific verification.

DR. D. C. ENGLISH made a motion that a special committee, consisting of Drs. Chandler, Balleray and Prout, be appointed, and that the recommendation contained in Dr. Chandler's paper be referred to this committee with power to prepare a bill and have it introduced at the next session of the Legislature. His motion was seconded and carried; and the committee was appointed. He did not think that the procedure should be regarded entirely as a punitive measure, as many of these persons were not criminals. If they could be put into a safer and better condition by vasectomy, he thought it was well to employ it. These people were not more irresponsible after the operation than before, and were better able to restrain themselves. No harm had been observed in either women or men as the result of the operation.

DR. BALLERAY was willing that vasectomy should be performed on the feeble-minded, but felt that to remove the testicles of criminals would have a great deterrent effect.

DR. CHANDLER said that he had recommended castration for a certain class of criminals.

Mental Hygiene and Prophylaxis

DR. HENRY A. COTTON, Trenton, reviewed the recent advances in the study of psychiatry and in the care and treatment of patients in insane hospitals, and said that not only in prophylaxis, but also in the after-treatment of patients who leave the hospital, the physician had an important field. There were a great many preventable forms of insanity, alcoholics making 20 per cent. of the admissions and 10 per cent. more being cases of general paralysis due to syphilis. These, with other indirect causes of insanity, would run the estimate up to 50 per cent. of cases of insanity that were entirely preventable. He regretted that the New Jersey law did not provide for voluntary commitment, and hoped that this defect would be remedied at the next session of the legislature. He thought that the care of the acute insane should not be entrusted to a layman, no matter how good. He believed that the counsel of the family physician would often be of value in so directing the life of his patient as to prevent the development of insanity.

DR. PROUT emphasized the upbringing of children as an element in the prophylaxis. He thought that obedience and imagination were both parts of the character sadly neglected in the training of children in the United States. This he considered a serious defect, and one that would lay the foundation for an unstable equilibrium in the mind of the individual.

DR. ALEXANDER MARCY, JR., Riverton, thought that institutions for the insane should be under the care of men thoroughly trained in this particular specialty. He thought that Dr. Cotton would not have gone far wrong if he had said that 75 per cent. of the cases of insanity are directly due to alcohol. He believed in a sharp differentation between the acute and curable insane and the chronic and incurable. He thought that the county institutions should take care of the latter, but that the state should take charge of the former, separating them from the chronic cases. He thought that the acute cases needed the most careful, painstaking, and thorough investigation. He believed that the stigmata of insanity were often implanted in the offspring of the degenerate, and considered the two questions closely allied.

DR. PARSONS said that the county asylum did care for the acute cases; and that chronic cases required much more care than the acute. He thought Dr. Marcy was discriminating too much in favor of one class at the expense of the other.

DR. LUTHER M. HALSEY, Williamstown, said that at the present day institutions for the insane were no longer regarded as asylums, but were looked on as hospitals. Daily staff consultations were held, and the management of the different cases discussed. He thought it almost impossible to get a lay super-

intendent capable of managing a county insane institution properly, and thought that politics was very likely to creep into the matter. He was in favor of a closer relation between the hospital physician and the general practitioner.

DR. COTTON did not think that every patient who had been in the state hospital for five years should be sent back to the county institution, as in a good many chronic cases the patients were violent and hard to manage. When they reached a stage of quiet dementia, they could be taught farming and housework. He thought that the physicians in county asylums worked under a great disadvantage, as they could not always get the superintendent to do what they wished.

The Supernutritive Properties of Milk

DR. ALEXANDER MCALISTER, Camden, said that cows' milk was ideal only for calves, although there was less danger in feeding a child with cows' milk than with that of any other animals. The fetus was nourished before birth by the blood, and afterward by milk, which was the nearest thing to blood. Milk was now regarded as a collection of living cells suspended in serum. These cells were nearly related to the white blood corpuscles. The valuable supernutritive properties were found only in whole milk. Milk that was not definitely known to be good and new should not be endorsed by physicians for nursery and clinical use. It was almost always possible in this country to get milk containing 100 per cent. of economic goodness. The place that could not command good milk for its infants and invalids should be held up to ridicule.

At What Age should a Child be Admitted to our Public Schools?

DR. JOSEPH FUNK, Elizabeth, said that the law of New Jersey permitted children to be sent to school at the age of 5 years. He considered this far too young, as mental development could not be expected until the child had laid the foundation for a good physical development. At 5, they were too young to concentrate their minds, and even tired of play very quickly. He thought no child should be sent to school until 7 years old, and that during the first two years after this the school hours should be short. A great deal of the school time should be spent in the open air.

DISCUSSION

DR. MARCY said that he wished to emphasize the points of shortening the school year, limiting the hours of confinement, attending more thoroughly to the physical and moral development, and allowing the mental development largely to take care of itself.

DR. ELIAS J. MARSH, Paterson, said that classes often had to be put on half time because school accommodations were insufficient. He suggested that the financial problem could be solved by having the children spend a large part of their time out of doors during school hours, using the ground around school houses for the purpose of conducting their exercises in for part of the day.

DR. HENRY L. COIT, Newark, considered it a mistake to send a child to school before the age of 8, the period between 5 and 8 being that of most critical development for the nervous system and in which it gained its greatest strength.

DR. LIVENGOOD said that there were too many studies in the public schools, and that the subjects were often too abstruse for the minds of the children. Even if the school hours were shorter, it would take all the pupils' spare time to prepare lessons. If the schools could be taken out of politics, he thought that radical changes in the right direction could be made.

DR. CHAVANNE did not approve of the manner in which children were stuffed with information, and said that much of the knowledge thus acquired was of no subsequent use.

DR. LINN EMERSON, Orange, said that children would readily acquire, in a short time, and without much waste of energy, what it would have required tremendous efforts on the part of the teachers to pound into their heads between the ages of 5 and 7. He thought that the child who began to go to school at the age of 8 years would be better grounded at the age of 12 than the child who had gone to school since the age of 5.

DR. CORNELL said that the teachers were powerless to change the course, unless backed up by the medical profession. They had to be governed by those higher in authority. He thought that if the New Jersey Medical Society would take some action regarding the matter, other state societies would follow its lead.

DR. MARCY offered a resolution that a committee of three be appointed to consider the subject of the school life of children, to report at the next meeting of the New Jersey Medical Society, and to make monthly reports of progress in the journal of the Society. The motion was seconded and carried.

Points in Infant Feeding

DR. D. E. ENGLISH, Milburn, was the author of this paper; but, he having been called home, the paper was read by Dr. D. C. English.

Efforts should be directed, not to making a perfect imitation of mothers' milk, but to obtain a food that suits the infant. No exact rules as to quantity can be laid down. Rules are based on the supposed capacity of the infant's stomach at different ages, and this is a most uncertain and variable criterion. If the child shows a normal increase in length and weight, it must be getting a proper amount of food. Lack of this increase is more often due to the quality than to the quantity of the food. In hot weather, one should be content if the child keeps well, and not insist on an increase in weight and length up to the full amount. The child requires a larger quantity of cows' milk than of breast milk. It is wrong to wake a child and insist on its swallowing a certain amount of food at a particular time. An infant should never be fed when it is not hungry. The child should be allowed to worry a while before each feeding. Occasional crying is the only form of physical exercise that a young infant can get. One should try to make the baby continue feeding until its stomach is full and distended. It is this distention that develops the stomach. It will not produce dilation, which is caused by feeding the child too frequently and not allowing the stomach to become entirely empty. After feeding, the baby should sleep. In regulating the time of feeding, one should not pay attention to the clock, but should watch the baby. The intervals will then tend to approximate those given in the text-books, but will be more irregular. By the age of 18 or 20 months, the feedings can be reduced to three good meals a day with something in between meals.

DISCUSSION

DR. FRANCIS E. TODD, Paterson, believed in putting the normal baby with a normal mother on the breast as soon as convenient after delivery. He was accustomed to allow the infant to nurse every six hours in the interval between delivery and that of free lactation. He considered the first secretions from the breast necessary to the child, clearing out its intestinal tract and leaving it in condition to take the pure milk of lactation. He thought the child could get almost enough water from the breast, but said that any water given it should be sterile. He preferred to have this given after nursing, instead of before. Breast-fed babies require less attention to their mouths than do bottle-fed babies. He thought that regular nursing brought about regular habits and made the child easier to care for. In mixed feeding, he would allow the child to get all the milk it could from the breast before giving it the bottle. Strong efforts should be made to secure certified or pure milk. He doubted whether the removal of a little of the cream from the top of the bottle would remove enough bacteria to make the procedure worth while. He thought that Dr. English gave the fruit juices a little earlier than necessary, and said that six or seven months was early enough for this. He thought milk formulas too weak, as a rule.

DR. LIVENGOOD said that the child's toys should be sterilized; and that, when placed on the floor, a sterile sheet should be put over the carpet.

Ophthalmia Neonatorum

DR. T. R. PAGNELLI, Hoboken, divided the disease into two forms, gonorrheal and non-gonorrheal, and said that the prognosis was better in the latter than in the former, but that the treatment was similar. Infection usually took place just before or just after the head passed the vagina. If the disease developed later than the fifth day, the disease must have been contracted from outside sources. The diagnosis should present no great difficulty. The prognosis depended on the bacterial cause,

the size of the fissure, the stage of the disease, and the nutrition of the infant. Various silver preparations were used in the treatment, and several different acids. The best method was that of Credé, which consists in instilling a drop or two of silver nitrate into the eyes of the new-born child after the lids have been cleaned.

DISCUSSION

DR. NORTON L. WILSON, Elizabeth, had seen far fewer cases in the last eight years than formerly, and believed this to be due to the use of the Credé method of treatment, particularly in institutions. He did not, however, recommend that this method should be employed in every case in private practice. He thought that in non-specific cases the eyes would get well in most instances, whether any treatment were employed or not, provided they were kept clean. Even specific cases would do much better if the eye were frequently and thoroughly flushed. He did not favor the application of continuous cold to the eyes, as he had seen much harm result from it. He preferred nitrate of silver to either argyrol or protargol.

DR. EMERSON'S experience with argyrol and protargol had been more satisfactory than that of Dr. Wilson. He believed that in many cases physicians were not explicit enough in giving directions about cleaning the eyes at certain intervals. They should give a demonstration to the one having charge of this of the manner in which it was to be done. He preferred to give a weaker solution to the mother or nurse to instil, and to use the stronger nitrate of silver himself.

DR. PAGNELLI said that if the patient were under the constant observation of the physician, the latter would be pretty well guided regarding any complications arising in the case.

Report on Recent Milk-Commission Legislation

DR. HENRY L. COIT, Newark, said that he was a member of a committee appointed twenty years ago, and never discharged, to attend to the subject of obtaining pure milk. This was the pioneer step in this direction. He said that an act had been passed by the New Jersey Legislature of 1909 conferring on the milk commission a legal status, and that it was the most comprehensive law on the subject ever placed on the statute books.

It was moved, seconded, and carried that the report be received, and that the committee be discharged with the usual pension of thanks of the society.

Medicolegal

Validity of Claims of Physicians for Making an Autopsy

The Supreme Court of Arkansas says, in Clay County vs. Thornton and another, that the latter parties, two physicians, filed claims of $25 each for professional services rendered in making an autopsy at the direction of a justice of the peace, acting in the absence of the regular coroner, who resided more than twenty miles from the place where the death of the subject occurred. On behalf of the county it was said, in opposition to the claims, that the jurors were not sworn in the immediate presence of the dead body, as is contemplated by the Arkansas statute, and that they did not together view the dead body before holding the inquest, as provided by the law, and because of the failure of the acting coroner to comply with the literal terms of the statute in this respect it was contended that the allowance to the physicians for making the autopsy was not valid. But the court does not agree with that. As it views it, this was a matter of procedure that addressed itself to the acting coroner and did not render an act done by the physician in good faith under the direction of the acting coroner unlawful.

It was also contended that the acting coroner exceeded his powers in employing and directing more than one physician to make the autopsy, and that, on that account, the county was not liable. The presiding judge, however, found from the evidence that the services of the two physicians were necessary to ascertain whether the circumstances of the death of the young woman indicated that she had been foully dealt with, and that the fees charged were reasonable. This being so, and the findings and judgment of the lower court, allowing the claims, being sustained by evidence legally sufficient, the supreme court affirms that judgment in the physicians' favor.

What Physicians May and May Not Testify to Involving Range of Bullets

The Criminal Court of Appeals of Oklahoma says, in Price vs. United States, that it was entirely proper for a physician to describe fully the location, character, and range of a bullet wound. But it was error, the court holds, to allow physicians to testify to their opinions as experts as to the position of the arm of the person shot at the time he received the fatal wound based on the range of the bullet after it entered his body. Medical science does not undertake to decide what range a bullet, fired from a gun or pistol, will take after coming in contact with, or entering, the human body. The reports of army surgeons and of army hospitals prove that there is no rule on this subject. They present the most astonishing, contradictory, and apparently impossible results. Therefore it has been uniformly held by the courts that this is not a proper subject for expert evidence. From this it necessarily follows that a physician should not be permitted to testify as an expert to the position of the body of a person when a wound was received, based on the range of the bullet after it entered his body.

Privilege in Case of Communications Made in Presence of Third Persons

The Appellate Court of Indiana, Division No. 1, says, in Indiana Union Traction Co. vs. Thomas, a personal injury case brought by the latter party, that the plaintiff testified as a witness in her own behalf and in the course of her examination in chief testified to services rendered to her immediately after the injury by a certain physician. On her cross-examination it was sought to ask her whether, on the day of the injury, she made certain statements descriptive of the manner in which the injury occurred, to her said physician, at the residence of, and in the presence of, her daughter, and in the presence of another woman. Objections to these questions were properly sustained. The statements about which the inquiries were made were in the nature of privileged communications to a physician within the intent of the Indiana statute. Without the consent of the patient the physician could not testify to such statements made by the patient, and the patient herself could not be compelled to divulge communications between her and her physician. The privilege attaches, notwithstanding the presence of third persons; and, while as to such a communication made in the presence of others, and such other persons be not necessary to enable the patient and the physician to communicate with each other, such third persons may be admitted to testify concerning the communcation, yet the privilege still exists so far as to exclude the testimony of the physician, and the patient as well, from divulging such communication as a witness.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

August 14

1 *Technical Difficulties in the Distention Method for Hypospadias and Other Urethral Affections. C. Beck, New York.
2 *Anatomic and Clinical Relations of the Sphenopalatine (Meckel's) Ganglion to the Nose and its Accessory Sinuses. G. Sluder, St. Louis.
3 *New Container for the Preservation of a Constant Temperature of Saline Solution for Rectal Irrigation or Infusions. R. C. Kemp, New York.
4 *Clinical Diagnosis of Pulmonary Tuberculosis. J. A. Miller, New York.
5 *Presence of Tubercle Bacilli in the Urine of Tuberculous Patients, Its Significance and Dangers. E. J. G. Beardsley, Philadelphia.
6 The Analogy of Migraine to Rheumatism. I. N. Cohen, Brooklyn.
7 Inflammation of the Verumontanum. J. A. Hawkins, Pittsburg.
8 *Error in Diagnosis Maintained by Microscopic Examination. C. J. Koenig, Paris, France.
9 Interesting Case of Double Uterus. J. A. Campbell, New York.

1. **Urethral Affections.**—Beck reviews his experience in those cases of urethral malformations, defects, deformities and injuries, which he has treated by urethral distention within the last nine years. So far as failures of the distention method are concerned, it seems to Beck that they are more due to the hand than to the method itself. The most frequent mistake made is that the urethra is not sufficiently mobilized. The method has yielded extremely gratifying results in Beck's work.

2. **Sphenopalatine Ganglion.**—Meckel's ganglion is in quite as close relation to the nose and its accessory sinuses as is the optic nerve. It has long been recognized that inflammatory processes in the sphenoidal, postethmoidal and maxillary sinuses extend to the optic nerve, and the fact has been demonstrated postmortem (Birsch-Hirschfeld). It is therefore altogether reasonable to assume, Sluder says, that these processes also pass over to Meckel's ganglion, although the clinical picture is very much less striking than the blindness produced by involvement of the optic nerve. According to his observations, characteristic disturbances have followed postethmoidal and sphenoidal suppurative inflammations which can not be explained otherwise than by assuming that Meckel's ganglion has become involved by extension; some of these disturbances have been transitory, and some have persisted for many years. In other cases the conviction has been equally positive that the extension has been from the nose proper. Thus far he has not seen anything that could be interpreted as an extension from the maxillary sinus. From the anatomic relations of Meckel's ganglion to the anterior boundary of the pterygopalatine fossa, i. e., to the posterior wall of the maxillary sinus, it is not very likely to be involved by extension of an inflammatory process from that sinus, inasmuch as the arteria palatina descendens and the arteria sphenopalatina, together with their accompanying veins and the surrounding connective tissue, lie between the ganglion behind, and the wall of the maxillary sinus in front. This relation appears to be constant; and Sluder believes that it explains why clinical manifestations referable to the ganglion do not ordinarily follow inflammatory processes in the maxillary sinus.

3. **Rectal Irrigation.**—Kemp employs a vacuum bottle with a specially devised attachment. Through the screw cap which closes the bottle, passes a small hard rubber (non-heat-conducting tube), to which is attached the outflow tube. Parallel to this is a filiform tube which allows the entrance of a fine column of air so as to render the flow possible. This last tube passes through the solution to within about one-eighth of an inch from the bottom of the bottle. As the instrument is employed inverted, it would correspond to the same distance from the top of the bottle. This filiform tube is of hard rubber externally where exposed to the air as a non-conductor of heat. The part lying within the bottle is purposely made of metal so that it is rapidly heated by the surrounding solution and the entering air is thus in turn heated markedly. A series of experiments demonstrated that there is only a loss of from 1 to 2 F. in the temperature of the solution in the bottle during the administration of proctoclysis (the drop method) lasting half an hour, a negligible amount. A screw compression valve is applied close to the bottle attachment so as to avoid as much as possible the solution cooling in the soft outflow tube. This outflow tube is joined to the catheter by a short piece of glass tubing for the purpose of observing whether the flow is constant. The catheter for rectal injection passes through a self-retaining rectal tip and the former can be inserted to any length desired. Asbestos ribbon is wound about the conducting tube from its junction at the bottle to the catheter. This lessens dissipation of heat and obviates the use of hot-water towels.

4. **Pulmonary Tuberculosis.**—Miller places special emphasis on the following points: The attitude of every physician toward tuberculosis should be that of constant suspicion. The history of intimate exposure to infection and a detailed inquiry into previous illnesses are of the greatest importance. A properly conducted physical examination is the cornerstone of the diagnosis, but physical signs of tuberculous toxemia are quite as important as are the signs in the lungs. Prolonged and repeated examinations are often essential. Failure to find the tubercle bacilli in the sputum and other excretions is evidence of little value. The tuberculin tests are valuable in connection with the clinical manifestations, but their exact significance is not yet absolutely determined. In general, the diagnosis is based on no one symptom, sign, or test, but on a careful correlation of all the evidence into a rational clinical picture.

5. **Tubercle Bacilli in Urine.**—Beardsley found that acid-fast and alcohol-fast bacilli are frequently present in the urine of tuberculous patients. He says that such bacilli have been proved in many instances to be capable of producing tuberculosis in animals, and, until it is conclusively proved that these bacilli are not virulent it is wise to consider all of them virulent. It is reasonable to believe that in tuberculosis tubercle bacilli are present, at times, in the blood of the individual. Tubercle bacilli may be present in the urine without a macroscopic lesion of the genitourinary organs. Although inoculation experiments are absolutely necessary to conclusively prove that a germ found in the urine is the specific bacillus of tuberculosis, nevertheless a bacillus that retains the carbol-fuchsin stain after thorough decolorization with Pappenheim's solution is likely to be the tubercle bacillus. Beardsley emphasizes that disinfection of the urine and feces of tuberculous patients is required to free them from danger of transmission of the disease to others.

8. **Error in Diagnosis.**—Koenig cites a case in which a serious affection of the throat and of the whole organism was not recognized on account of the resemblance, or rather non-resemblance, which exists microscopically between the *Spirochæta pallida* of Schaudinn and the spirillum of Vincent.

Medical Record, New York

August 14

10 Military Obligations of the Medical Profession. J. R. Kean, U. S. Army.
11 Features of the Medical Department of the Navy in Peace and War. C. F. Stokes, U. S. Navy.
12 The National Guard Surgeon. W. G. Le Boutillier, New York.
13 The Hygiene of the Regiment. H. Brooks, New York.
14 Instruction of the Hospital Corps. E. P. Fowler, New York.
15 *Medical Education in France and Germany. E. St. Jacques, Montreal, Canada.
16 Traumatic Hysteria in Its Relation to Surgery. B. C. Loveland, Syracuse, N. Y.
17 *Hygiene of the Air Passages. A. B. Judson, New York.
18 Skin Disinfection with Iodin in Abdominal and Other Operations. C. Jewett, Brooklyn.

15. **Medical Education in France and Germany.**—St. Jacques says that in Germany laboratories are numerous and better equipped, and research work is extensively carried on. Clinical facilities are greater in France. Paris excels in skin, nervous and genitourinary diseases, in surgery and bacteriology. Postgraduate work is more practically organized in Germany.

17. **Hygiene of Air Passages.**—Judson draws attention to the fact that coughing, sneezing and blowing the nose do not relieve the subject, but that by increasing the congestion and irritation of the air passages they increase the condition which the patient seeks to relieve. By proper control of these things suffering will be lessened.

Boston Medical and Surgical Journal

August 12

19 *Problem of Cancer Considered from the Standpoint of Immunity. F. P. Gay, Boston.
20 Importance of Active Muscular Exercise in Restoration of Function. C. H. Bucholz, Boston.
21 *Acute Postoperative Dilatation of the Stomach. J. R. Torbert, Boston.
22 *Congenital Imperforation of the Esophagus with Tracheoesophageal Fistula. A. R. Robertson, Boston.
23 Thrombosis of the Left Femoral Artery. C. S. Walker, Keene, N. H.

19. **Cancer Immunity.**—Gay claims that it is justifiable to regard the pre-metastatic period of a tumor as a period during which the animal shows reaction products to cancer tissue, and during which period the animal is able successfully to combat a generalized infection of the cancer. In those cases in which spontaneous resorption of the tumors occurs, which are relatively frequent in animals and have also been described in human beings, it may be supposed that the resistance of the individual has succeeded in overcoming the cancer. From experiments carried out by Gay in animals, it would seem possible that during this pre-metastatic reaction

period, the resistance of the individual may be increased by re-inoculation of the tumor, or possibly of products of the tumor, to such an extent that the resorption of the original tumor may be brought about.

21. **Postoperative Dilatation of Stomach.**—Torbert points out that acute postoperative dilatation of the stomach is not so rare as the literature would lead one to believe. The diagnosis can usually be made by having the subject in mind, especially when we have the presence of distention, vomiting of large amounts of brownish-green fluid, no necessary rise in temperature, rapid pulse and a rapidly increasing collapse. The passage of the stomach tube will usually establish the diagnosis. According to reported cases, the condition is very fatal, Laffer stating that 63.5 per cent. of those affected die. When the condition is recognized early, however, most of the patients respond well to treatment, the high mortality figures being probably due either to a late diagnosis or to a complete failure in recognizing the condition. The importance of the stomach tube as a part of an operation outfit is emphasized by the existence of this comparatively recently recognized condition.

22. **Esophageal Malformations.**—Robertson cites a case in which the esophagus consisted of two distinct portions entirely separated from one another. The upper portion opened normally above into the pharynx, but below it ended in a blind cul-de-sac, the lowest portion of which was 1.4 c.c. above the tracheal bifurcation. The lumen was about uniform throughout; the thickness of the wall increased slightly toward the lower end. The mucous membrane was pale, smooth and slightly thrown into folds. The lower moiety was in all respects smaller than the upper part. Below it opened normally into the stomach, but above it formed a fistulous communication with the posterior wall of the trachea at a point 8.4 mm. above the bifurcation and 6 mm. below the pouch-like end of the upper part. The mucous membrane was smooth and pale. The pylorus was freely patent, measuring 15 mm. in circumference. The mucous membrane of the stomach and intestines was smooth and pale.

Lancet-Clinic, Cincinnati

August 7

24 The Blood Vessels in Fused (Horsesnoe) Kidney. B. Robinson, Chicago.
25 General Peritonitis as a Complication of Appendicitis: Report of Case. J. N. Ellison, Sardinia, Ohio.
26 *New Method of Inducing Local Anesthesia. J. L. Ransohoff, Cincinnati.

26. **New Method for Inducing Local Anesthesia.**—Ransohoff publishes a case preliminary to a series of experiments on a new method of local anesthesia—that is, by injecting a mild cocain solution directly into the artery supplying the part to be anesthetized. The patient had been suffering for three years from a chronic osteomyelitis of the hand, which became so painful as to necessitate amputation. His age and condition contraindicated general anesthesia. An Esmarch bandage was applied about the arm two inches below the insertion of the deltoid. Under infiltration anesthesia the brachial artery was exposed and the needle of a hypodermic syringe inserted into its lumen, and 1 c.c. of a 2 per cent. cocain solution injected into the artery in the direction of the blood current. After a lapse of two minutes the anesthesia was absolute, and an antebrachial amputation was done entirely without the knowledge of the patient.

Northwestern Lancet, Minneapolis

July 15

27 Congenital Syphilis. F. R. Wright, Minneapolis.
28 Stomach Pains. W. Zweig, Vienna, Austria.
29 Irregular Ethics, Grafts, and Frauds in the Profession. J. A. Hohf, Tripp, S. D.
30 Hernia. N. L. Werner, Red Wing, Minn.
31 Medicine in Edinburgh. G. D. Head, Minneapolis.

Virginia Medical Semi-Monthly, Richmond

July 23

32 *Influence of Sleep on Arteriosclerosis. W. W. Beveridge, Asbury Park, N. J.
33 Surgical Diseases of the Kidney. J. G. Sherrill, Louisville, Ky.
34 Surgery of the Peripheral Nerves. J. S. Horseley, Richmond, Va.
35 Frigidity from the Sociologic and Gynecologic Viewpoint. C. M. Strong, Charlotte, N. C.
36 Dead Fetus Seven Months: Complete Placenta Prævia Associated with Round Worms. J. W. McGehee, Reidsville, N. C.

32. Abstracted in THE JOURNAL, July 31, 1909, p. 401.

Medical Fortnightly, St. Louis

July 26

37 Touring Lands Where Medical Science Evolved. R. G. Eccles, Brooklyn.
38 Toxicology of Tobacco Smoke. A. A. Robinson, Ogden, Utah.
39 The Reading of Prescriptions—Of Interest to the Physician, the Pharmacist and the Layman. J. F. Chandler, Forest City, Mo.
40 Directions for Preoperative and Postoperative Treatment of Peritonotomy for Nurses and Internes. B. Robinson, Chicago.

Philippine Journal of Science, Manila

April

41 Achievements of Modern Medicine. P. C. Freer, Manila.
42 *Cultivation of Bacillus Lepræ. M. T. Clegg, Manila.
43 Treatment of Asiatic Cholera During the Recent Epidemic. H. J. Nichols, U. S. Army, and W. L. Andrews, Manila.
44 *Treatment of Cholera by Injections of Hypertonic Saline Solution with a Simple, Rapid Method of Intra-abdominal Administration. L. Rogers, Calcutta, India.
45 Suppression of the Cholera Outbreak in the Provinces of the Philippine Islands. A. J. McLaughlin, U. S. P. H. and M.-H. S.
46 Piroplasmosis. E. Martini, Manila.
47 Distribution of Filaria in the Philippine Islands. J. M. Phalen and H. J. Nichols, U. S. Army.

42. **Cultivation of Bacillus Lepræ.**—The experiments conducted by Clegg on the cultivation of the leprosy bacillus were confined entirely to an attempt to grow the organism in symbiosis. Believing that the leprosy bacillus derives its nutrition from the products of the tissue cells in the lesions in which it is encountered, and from the fact that it occurs so frequently within the protoplasm of these cells, an organism was selected which could be cultivated and which corresponded in a degree to the living tissue cells; that is, an organism containing a nucleus and protoplasm, the ameba. The culture medium was composed of agar 20 grams, sodium chlorid 0.5, extract of beef 0.3; it was otherwise prepared in the same manner as ordinary agar media for bacteria, the finished product giving a reaction of 1 per cent. of alkaline to phenolphthalein. The medium was then placed in tubes and sterilized.

The culture medium, when it is to be used, is melted and poured into sterile Petri dishes and allowed to harden before being inoculated. The material containing the ameba is then spread in a thin layer over the surface of the medium. If the proper symbiotic bacteria are present, the ameba will develop in from two to ten days, depending on the source of the ameba and the number and character of the bacteria present. A culture of ameba was obtained from a dysentery stool and after a sufficient growth of the ameba had occurred to overbalance the original symbiotic bacteria growing with the ameba, that is to say, when it would have been necessary to add a fresh supply of the symbiotic bacteria to the culture in order to obtain a further development of the ameba, leprosy bacilli were added instead.

The inoculation of the plates with leprosy bacilli was accomplished by smearing the surface of the medium containing the ameba with a portion of the pulp of a leper's spleen, and incubated for six days at a temperature of 37 C. Microscopic preparations were then made from the cultures and stained with hot carbol-fuchsin solution, decolorized and counterstained by Gabett's method. A great number of leprosy bacilli were found to be present, together with short, plump, acid-fast bacilli, occurring mostly among the clumps of the leprosy bacili, and associated closely with the ameba. Those organisms which from their morphology were evidently leprosy bacilli were undoubtedly carried over from the original source, that is, from the spleen. Transplants from these plates were immediately made on fresh plates containing ameba and their symbiotic organisms, and incubated for two days at the same temperature. Slides were then prepared from this series of cultures and stained in the same manner. Microscopic examination showed that the short, plump acid-fast bacilli had increased in number, showing conclusively that the organism was multiplying. Control plates made at the same time with the same ameba and in the same manner, except without the material from the leper's spleen, showed no acid-fast organisms. In the cultures from two cases an acid-fast bacillus is growing and multiplying, which although it differs from

the leprosy bacillus in morphology, nevertheless may be that organism, as we know nothing regarding the morphology of *Bacillus lepræ* on artificial media.

44. **Treatment of Cholera.**—Rogers found that the severity of the cholera attack is in proportion to the loss of fluid and salts from the blood, which, in all but mild cases of the disease, it is desirable to replace. This can best be done by the intravenous injection of about four pints of hypertonic salt solution, two drams of sodium chlorid to the pint (1.35 per cent.) being a suitable strength. The use of this solution has reduced the mortality during 1908 in the Calcutta Medical College Hospital by nearly one-half. The salt solution may be given intraperitoneally with great advantage. Postcholeraic uremia is associated with deficient blood pressure, and should be treated by methods which raise the tension in the arterial system.

Journal Abnormal Psychology, Boston

July

48 The Psychologic Principles and Field of Psychotherapy. M. Prince, Boston.
49 Therapeutic Value of Hypnotic Suggestion. F. H. Gerrish, Boston.
50 Simple Explanation and Re-education as a Therapeutic Method. E. W. Taylor, Boston.
51 Treatment of Fatigue States. G. A. Waterman, Boston.
52 Psychoanalysis in Psychotherapy. E. Jones, Toronto, Canada.
53 The Psychotherapeutic Value of the Hypnoidal State. B. Sidis, Brookline, Mass.
54 Obsessions and Associated Conditions in so-called Psychasthenia. J. E. Donley, Providence, R. I.
55 Psychoprophylaxis in Childhood. T. A. Williams, Washington, D. C.

Cleveland Medical Journal

July

56 Psychotherapy and the Emmanuel Movement. W. Sinkler, Philadelphia.
57 Hemorrhage in Ruptured Ectopic Pregnancy. H. Robb, Cleveland.
58 Administration of Nitrous Oxid and Oxygen for General Anesthesia. C. B. Parker, Cleveland.
59 The Skiagraph in Litigation. R. B. Newcomb, Cleveland.
60 Calcification of Fibromyomata of the Uterus. I. Ludlow, Cleveland.
61 Tonsil Enucleation with Its Capsule and Description of the Technic. W. B. Chamberlain, Cleveland.
62 Diagnosis and Treatment of Brain Tumor (continued). A. Peskind, Cleveland.

August

63 *Painless Dental Disease as a Cause of Neurasthenia and Insanity. H. S. Upson, Cleveland.
64 Exudative Diathesis with Demonstration of Cases. H. J. Gerstenberger, Cleveland.
65 Fracture of the Anterior Superior Spine of the Ilium by Muscular Contraction; Review of Literature. J. H. McHenry, Cleveland.
66 The Tuberculo-Opsonic Index. P. A. Jacobs, Cleveland.
67 Extraction of the Lens in its Capsule—or Intracapsular Expression of the Lens. C. C. Stuart, Cleveland.
68 Acute General Peritonitis in a Ten-Year-Old Girl. F. E. Bunts, Cleveland.
69 Hallux Valgus and Bunion. G. J. Bauman, Cleveland.

63. **Dental Disease.**—Upson puts on record a few observations made during the past two years in a broad and important field, that relating to dental diseases in connection with nerve strain and with the psychoses, melancholia, mania and dementia præcox. He says that of all cases of neurasthenia and the psychoses not due to obvious physical causes, such as digestive disorders and eyestrain, the great majority, possibly four-fifths in men and three-fifths in women, are due to dental disease. In several of his patients, severe nervousness, insomnia and melancholia have begun soon after extensive bridgework and capping. These symptoms have persisted several years without pain, and relief has followed only after removal of irritation in the teeth and jaws. Upson reports a number of cases in support of his contention.

Maryland Medical Journal, Baltimore

August

70 *The Widened Scope and Affiliations of Psychiatry. C. B. Farrar, Baltimore.
71 Ideals of Health in Town and Country (continued). C. O'Donovan, Baltimore.
72 *Study of Some Phases of Family Psychoses. J. G. Fitzgerald, Boston.
73 Avicenna—Avenzoar. H. M. Cohen, Baltimore.

70. Abstracted in THE JOURNAL, May 29, 1909, p. 1785.

72. **Family Psychoses.**—Fitzgerald believes that there is an evident tendency when several members of the same family of one generation become insane, to show a fairly uniform reaction type, so that it is possible to classify these cases as belonging to one given clinical group. There is also evidence to show that with succeeding generations, a psychosis occurring in each generation, there is a lowering of the reaction type and a likelihood of deteriorating psychoses developing, and still further from the original antecedent a probability of gross defectives appearing.

New Orleans Medical and Surgical Journal

August

74 Plea for the Systematic and Universal Examination of School Children's Eyes, Ears, Noses and Throats. F. Allport, Chicago.
75 Severe Deformity, Result of Anterior Poliomyelitis: Plastic Operation on Heel; Inguinal Hernia. C. W. Allen, New Orleans.
76 Amebic Dysentery. G. Dock, New Orleans.
77 *Diarrhea of Gastrogenous Origin. S. K. Simon, New Orleans.
78 Toxic and Nervous Conditions as Factors in Chronic Diarrhea. G. F. Patton, New Orleans.
79 Surgical Aspects of Chronic Diarrhea: Appendicostomy or Colostomy. H. Gessner, New Orleans.
80 *Acute Spasmodic Asthma as Evidence of Autointoxication. A. Eustis, Abbeville.
81 *Prophylactic Injections of Serum and the Theory of Anaphylaxis. I. I. Lemann, New Orleans.
82 Blue Sweat (Indicanhydrosis). J. A. Storck, New Orleans.

77. **Diarrhea of Gastrogenous Origin.**—The diarrheas of purely gastrogenous origin can not be said to be of very frequent occurrence, but, though relatively infrequent, the stomach, according to Simon, does play a part, and he emphasizes the importance of this class of diarrheas.

80. **Acute Spasmodic Asthma Evidence of Autointoxication.**—In 1905, Eustis first called attention to the clinical significance of indicanuria, and since then he has made it a practice to include this in the routine examination of patients. The fact that he has found evidence of autointoxication in every case of asthma examined by him for four years, leads him to believe that during the attack there is some toxin in the blood, which acts similarly to muscarin, or which depresses the respiratory center to such an extent that the reflex stimulation of an inflamed nasal mucosa results in a stimulation of the constrictor fibers of the vagus. Nearly every one of these cases was relieved by diminished nitrogenous diet and measures to reduce the toxemia. Eustis employs eliminative treatment and more hygienic procedures, using few sedatives.

81. Abstracted in THE JOURNAL, May 22, 1909, p. 1687.

Northwest Medicine, Seattle, Wash.

July

83 Use of Vaccines and Serums. C. S. Wilson, Tacoma, Wash.
84 Nasal, Nasopharyngeal and Oropharyngeal Obstructions with Special Reference to Children. J. W. Summers, Walla Walla, Wash.
85 The Brompton Hospital and its Treatment of Tuberculosis by Graduated Labor. C. Quevli, Tacoma, Wash.
86 Suggestions in the Use of Water Cystoscopes. A. H. Peacock, Seattle, Wash.

Archives of Diagnosis, New York

July

87 *Complement Fixation Test in Diagnosis of Syphilitic and Metasyphilitic Conditions. H. Noguchi, New York.
88 *Roentgen Rays in Diagnosis of Pulmonary Tuberculosis. S. Lange, Cincinnati.
89 *Differentiation of Reflex Dyspepsia from Primary Organic Diseases of the Stomach. D. Fulton, Los Angeles.
90 Diagnostic Significance of Epithelia in Urine. L. Heitzmann, New York.
91 Importance of Early Diagnosis of Tabes and Cerebrospinal Lues. T. A. Williams, Washington, D. C.
92 Points in Diagnosis of Tumors of the Spinal Cord. J. Grinker, Chicago.
93 Hematuria, Pyuria and Allied Conditions in Infants and Children. L. C. Ager, Brooklyn.
94 *Diagnostic Signs in New Growth of Kidney. F. Cabot, New York.
95 Henoch's Purpura with Symptoms Like Acute Appendicitis. J. A. Lichty, and H. H. Donaldson, Pittsburg.
96 Itching, A Pain Equivalent. C. H. Bangs, Boston.
97 Multiple Spontaneous Keloid. G. M. MacKee, New York.

87. **Syphilitic and Metasyphilitic Conditions.**—Noguchi emphasizes the fact that any method in which five different factors—amboceptor, complement, corpuscles, antigen and patient's serum—are not separable, titrable and adjustable, is defective in principle and should not be recommended for diagnostic purposes. As regards the value of the butyric-acid reaction in the diagnosis of nervous diseases, the results obtained by Noguchi, together with Moore, Rosanoff and Wiseman, show that it is positive in nearly 90 per cent. of cases of paresis and tabes, and that it is nearly as reliable a diag-

nostic indicator as is pleocytosis. Compared with the percentage of positive results by the Wassermann reaction, the butyric acid test yields better results, especially in cases of cerebrospinal lues in which the Wassermann reaction is usually inconsistent.

88. **Pulmonary Tuberculosis.**—Lange believes that the thorax is peculiarly adapted for Roentgenologic examinations, but all conclusions must be based on technically perfect plates made during a respiratory "still-stand." The interpretation of the shadows must be correlated to the history and clinical findings. The Roentgen ray will register actual and definite increase in density of the lung tissues. Since the term incipient tuberculosis is a clinical (not a pathologic) one, and since the recognition of incipient tuberculosis must depend on the size, distribution and location of the lesions and on the skill of the examiner, a comparison between the usual physical examination and the Roentgen ray examination is difficult to make. For deep-lying lesions and bronchial gland involvement the Roentgen ray is superior. Roentgen ray findings point to the bronchial glands and lung hilus as the most common starting points of tuberculosis.

89. **Differentiation of Reflex Dyspepsia.**—According to Fulton, the symptoms of all primary organic diseases of the stomach are dependent on the quality or quantity of food eaten. Functional and nervous dyspepsias are independent of the diet and are dependent on the nervous conditions of the patient. Reflex dyspepsias are but slightly influenced by diet and are dependent on aggravation of the primary disease, and are absent when the primary disease is latent.

94. **Diagnostic Signs in New Kidney Growth.**—In the case of a patient who presents himself with a history of intermittent hematuria in whom no blood is found in the urine, either by macroscopic or microscopic examination, Cabot advises massaging the kidneys, one at a time, as was done in a case cited. A man, aged 47, gave a history of occasional attacks of hematuria with periods between of several weeks when his urine was free from blood. *X*-ray examination was negative. Bimanual examination of the kidneys seemed to show some enlargement of the right kidney, but not perfectly clear. The patient had been told by a distinguished surgeon that probably both kidneys were diseased and operation was not advisable. Cystoscopy revealed a perfectly normal bladder and normal ureteral openings. A catheter in each ureter for a distance of six inches drew off clear urine. On massaging each kidney separately immediately abundant bright red blood gushed out of the right ureteral catheter; none from the left. The diagnosis of hypernephroma of the right kidney was confirmed by operation.

Woman's Medical Journal, Toledo, O.

July

98 Relation of the Physician to the Public. F. P. Henry, Philadelphia.
99 Early Diagnosis of Extrauterine Pregnancy. G. P. Murray, New York.
100 Chemical Rays as Promoters of Life and Energy: Their Mode of Action and Their Therapeutic Uses. M. A. Cleaves, New York.

Archives of Pediatrics, New York

July

101 Diagnosis of Tuberculosis in Young Children. H. L. K. Shaw, and A. T. Laird, Albany, N. Y.
102 *Relation of Measles, Whooping Cough, and Influenza to Tuberculosis in Childhood. E. P. Copeland, Washington, D. C.
103 *The Soy Bean in Infant Feeding. J. Ruhräh, Baltimore.
104 Tuberculous Enteritis, with Foreign Body in Ileum, Probable Primary Intestinal Tuberculosis. J. C. Gittings, Philadelphia.
105 Forty Cases of Anterior Poliomyelitis, Observed in New York City During the Epidemic of 1907. H. Heiman, New York.
106 Case of so-called Congenital Malaria. F. S. Meara, New York.
107 Tertian Malaria (Golgi Type), with Gastrointestinal Symptoms. J. J. Philips, Tarboro, N. C.
108 *Two Interesting Dermatologic Cases. C. J. Hunt, Philadelphia.
109 Pulmonary Gangrene in Children; Report of a Case. W. P. Lucas, Boston.

102. Abstracted in THE JOURNAL, Oct. 17, 1909, p. 1366.

103. **Soy Bean in Infant Feeding.**—The soy bean (*glycine hispida*), sometimes incorrectly called the soja bean, is an annual leguminous plant which originally grew in a wild state from Cochin, China, to the south of Japan and to Java. It is now being grown in various sections of this country and can be obtained in the open market like any other legumin. As regards the use of the beans in infant feeding, it seemed to Ruhräh that soy bean gruel or milk, either alone or mixed with cow's milk, might be of value in feeding several classes of cases, viz., of marasmus and malnutrition, as a substitute for milk in diarrhea, and in intestinal and stomach disorders, and in diabetes mellitus. So far, the gruel has been prepared by soaking the beans over night, stirring to remove the envelop surrounding the bean. Three times the amount of water is added to the beans and they are boiled until a smooth gruel results. This is strained, if necessary. This has the odor and taste of malt, but with the addition of a little salt is well taken, especially after the first bottle or two. The gruel is retained unusually well and seems to be digested easily. The stools are not more frequent than with other foods; they are light brown in color, like those from malted milk. This soy bean gruel has nearly the same food value as milk, and for certain children may need further dilution. About the same size feedings should be used as if milk were being given; 5 per cent. sugar may be added to increase the fuel value. Ruhräh has not used the beans in a sufficiently large number of cases, nor over sufficient periods of time to justify any further statements at this time, but he feels that properly used they will be a most valuable addition to the dietary of the sick infant. Grinding them to a bean meal would simplify matters very much, and, if success attends their use, a soy bean meal could easily be prepared.

108. **Two Interesting Dermatologic Cases.**—The reason for the report of these two cases is found in the character of the lesions, their association and mode of onset. In both there is a certain similarity as to the personal history, and the character and distribution of the lesions were identical as to region. They appeared on the tips and on the extensor surfaces of the phalanges of the upper extremities as distinct vesicles of large size, without an inflammatory areola, caused a separation of the epidermis from the corium, were filled with a sterile serous fluid, and were accompanied locally by itching, burning and heat. The first patient, a girl of 10 years, had fallen while at play, striking her hands rather severely. She complained at the time that her hands "stung," but no lesions of any type were observed, though the hands were somewhat reddened. For relief the child put her hands under cold water and immediately lesions of the type described above appeared. She had pertussis when 2 years old, which merged into an attack of measles, apparently uncomplicated. At a later date, she had an attack of varicella, and at her sixth year, and later, suffered considerably from rheumatism in the upper and lower extremities. She had three attacks of infectious blepharitis, complicated in every instance by a facial tic, which involved, for the most part, the muscles of the eyelids. She had had frequent mild attacks of urticaria and one severe attack which was associated with aching of the extremities. A careful physical examination showed that she was totally negative, except for enlarged tonsils, which were removed. The lesions healed without infection and there have been no recurrences.

The patient, a boy aged 7 years, while riding on the street car, suddenly felt a sense of burning pain in his hand and found what he called blisters on the ends of his fingers. The boy complained of burning and pain, with itching, and there was some local heat. He had pertussis at his sixth year, and has been subject to slight digestive disturbances for a long time past, especially in the last six months. Ever since his third year he has had a well-developed urticaria during the strawberry season, and during the last year had a severe attack of urticaria following excessive sweating while at play. He has complained of rheumatic pains in the extremities during the past winter more than during any previous winter.

Kansas City Medical Index-Lancet

July

110 Puerperal Sepsis. E. A. Reeves, Kansas City, Mo.
111 The McCoy Instruments in the Submucous Resection of the Nasal Septum. H. Hays, New York
112 *Increased Longevity of Life Insurance Policyholders. R. Foster, St. Paul.
113 The Psychologic Basis of Inebriety. T. A. Williams, Washington, D. C.
114 Value of Formidine as a Surgical Dressing in Minor Operations. O. M. de Kelffer, Chicago.

115 Paracentesis in Certain Forms of Eye Symptoms. W. A. Camp, Springfield, Mo.
116 The Case Against the Sun. C. E. Woodruff, U. S. Army.
117 Burns and Scalds. E. P. Lacy, Bessemer, Ala.

112. This subject was discussed editorially in THE JOURNAL, May 1, 1909, p. 1428. The article was also published in *The Medical Fortnightly*, April 26, *Southern California Practitioner*, May, *Southern Practitioner*, May, *Alienist and Neurologist*, May.

Annals of Surgery, Philadelphia

July

118 *End Results After Total Excision of the Scapula for Sarcoma. C. B. G. de Nancrede, Ann Arbor, Mich.
119 The Old and Beginning of the New in Surgery. J. E. Mears, Philadelphia.
120 Sudden Death: Study of Certain Cases Occurring During Physical Exercise or Psychic Shock. J. B. Blake, Boston.
121 *Treatment of Tetanus by Chloretone. W. Hutchings, Detroit.
122 *Aneurisms in Young People. T. A. McGraw, Detroit.
123 *Gunshot Injury of Brain. J. Ransohoff, Cincinnati.
124 Complete Detachment of Facial Bones from Cranium, together with Multiple Fractures of the Sides and Base of Skull. C. A. Powers, Denver.
125 *The Parathyroid Question. C. H. Mayo, Rochester, Minn.
126 *The Histopathology of Goiter. F. J. Shepherd and C. W. Duval, Montreal, Canada.
127 *Excision of the Larynx for Carcinoma. J. Bell, Montreal.
128 *Operative Treatment of Heart Wounds. C. H. Peck, New York
129 *Operative Treatment of Tuberculosis of the Lungs with Total Thoracoplastic Pleuropneumolysis. P. L. Friedrich, Marburg, Germany.
130 *Resection of Ribs Combined with External Pressure in Treatment of Tuberculosis of Apex of the Lung. L. Freeman, Denver.
131 *Treatment of Fistulas and Abscesses Following Operations for Empyema of the Thorax. A. J. Ochsner, Chicago.
132 Empyema Thoracis. A. Vanderveer, Albany, N. Y.
133 Esophagogastrostomy After Intrathoracic Resection of the Esophagus. W. Meyer, New York.
134 *Chronic Intestinal Stasis. W. A. Lane, London.
135 *Surgery of the Large Intestine. W. J. Mayo, Rochester, Minn.
136 Distortion of Mesentery and its Relation to Intestinal Obstruction. J. D. Bryant, New York.
137 *Rare Hernias. W. B. Coley, New York.
138 *Vesicointestinal Fistulas. F. W. Parham, and J. Hume, New Orleans.
139 *One Hundred and Thirty-one Consecutive Cases of Fibroid Tumors of the Uterus Demanding Operation. A. Maclaren, St. Paul.
140 *Resection of the Sciatic Nerve. K. A. J. Mackenzie, Portland, Ore.
141 Inequalities of the Right and Left Femora. A. T. Bristow, Brooklyn.
142 Transportation of Skin Flaps from one Part of the Body to Another and from one Individual to Another. J. M. T. Finney, Baltimore.
143 *Massive Keloid of Face and Hands. C. A. Porter, Boston.

118, 134. Abstracted in THE JOURNAL, July 3, 1909, pp. 68, 69.

121. Published in *Surgery, Gynecology and Obstetrics*, July, 1909.

122. **Aneurisms in Young People.**—McGraw reports two cases of aneurism in young men 16 and 17 years of age. Both aneurisms were associated with great dilatation of the heart and, in both patients, the arteries were soft and fragile. There was no history of rheumatism or other acute infectious diseases.

123, 135, 137, 139, 140.—Abstracted in THE JOURNAL, July 31, 1909, pp. 407-409.

125, 127, 129, 131.—Abstracted in THE JOURNAL, July 24, 1909, p. 319.

126. **Histopathology of Goiter.**—Shepherd and Duval studied fifty-nine cases. Eighteen were unquestionably cases of Graves' disease, two of which proved fatal. The infolding and budding of the acinal epithelium was present in some parts of the gland in 20 cases. The gland presented tumor formation in three cases of the series, viz., carcinoma in one, intercystic papilloma in another, and angioma in still another. Chronic inflammation in the form of lymphoid cell and plasma cell infiltration, together with an increase in fibrous tissue stroma, occurred 29 times. Eleven cases were of a simple cystic nature.

128. **Operative Treatment of Heart Wounds.**—Peck reports a case of wound of the right auricle which was sutured, with recovery of the patient. He also tabulates 158 cases of sutured heart wounds.

130. **Surgery of Lung Tuberculosis.**—Freeman says that the healing of stubborn tuberculous pulmonary lesions is favored by collapse of the lung. This may be obtained by (a) artificial pneumothorax; (b) extensive extrapleural resections of all the ribs, with removal of their periosteum; (c) local resections of ribs, especially at the apex. The first method is not always applicable, owing to adhesions and to induration of lung tissue, while the second is difficult and dangerous, and should be employed under exceptional conditions only. The third method is applicable to obstinate troubles at the apex, and can be employed alone or in conjunction with an artificial pneumothorax, according to circumstances. Its full benefit can not be obtained, however, unless the removal of the ribs, which need not include their periosteum, is followed by the application of firm external pressure in the manner suggested by Freeman.

138. **Vesicointestinal Fistulæ.**—Parham and Hume summarize their article as follows:

1. Establish clearly the nature of the lesion.
2. Determine the location of the opening in the bladder and in the intestine, when possible; this can usually be done by the modern methods of exploration of the rectum and bladder, and by a study of the intestinal contents passed *per urethram*.
3. Medical treatment is always to be tried for a reasonable time, as some patients have recovered under such management, and certain fistulæ of syphilitic origin have been absolutely cured by appropriate treatment.
4. The prognosis in patients untreated is generally bad and spontaneous cures are rare.
5. Ascending infection of the kidneys is one of the most important sequelæ, and this is always to be feared in patients who do not recover within a reasonable time.
6. Colostomy relieves the symptoms though it does not cure the condition, but it is to be tried in all cases in which a radical procedure is not possible.
7. Radical operation is always to be preferred, when practicable; from below, when the fistula is situated within 4½ inches of the sphincter in suitable cases; intraperitoneally, for high-placed fistulas the viscera being separated and direct suture of each opening done.
8. When the radical operation can not be done, bilateral or total exclusion of the portion of the intestine involved, may be done when there is no urinary flow into the bowel; this not being advisable, one of the shunting anastomosis procedures should be done, or simple drainage of an intermediary pouch resorted to.
9. The suprapubic intravesical suture of the bladder orifice is not to be recommended, because difficult of execution and uncertain in result.
10. Exploratory laparotomy is indicated in all cases in doubt to determine the location of the fistula and the operation of choice. Colostomy is to be regarded as an operation of last resort and applicable only in those cases in which the artificial anus may with certainty be placed above the fistulous communication with the bladdder.

143. **Massive Keloid of Face and Hands.**—In Porter's case the patient's face presented masses of keloid extending from the hair line on the forehead over the whole face, including both ears. A small portion of the right cheek was visible, the eyes appearing as slits in the midst of the exuberant overgrowths. Slight impairment of hearing; vision in left eye was interfered with; mouth could be opened only half an inch. There was excessive keloidal growth on the backs of both hands and the lower third of forearms, the fingers being hyperextended, twisted and distorted. In numerous places the keloidal tissue was eroded, with some foul discharge from the sulci between adjacent lobules.

After many operations, there has been a gradual but distinct abatement of the tendency to form keloidal tissue. The forehead is covered by shiny, movable skin, resulting partly from natural healing and partly from skin grafts. There is some keloid about the deformed ears, but both show evidence of their presence. The nose and cheeks are fairly normal, but there is still some ectropion in spite of the numerous operations. The hands have been improved so far as ability to grasp objects with the thumb is concerned, but dorsal hyperextension of the fingers still persists. Roentgen ray exposures seem to have been of no value.

Journal Missouri State Medical Association, St. Louis

July

144 Medical Organization. A. R. Kieffer, St. Louis.
145 Trend and Benefits of Modern Medicine. R. H. Goodier, Hannibal.
146 Nature of Cancer and Recent Additions to the Methods of Treating Inoperable Cancers. F. J. Lutz, St. Louis.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

July

147 State Care of the Insane. W. F. Drewry, Petersburg, Va.
148 Practical Methods for the Suppression of Tuberculosis in Virginia. C. P. Wertenbaker, Norfolk, Va.
149 Incised Wounds of the Liver Due to Accidental Traumatism: Report of Case Complicated by Evisceration. A. McGlannan, Baltimore.
150 Adenoids—Causes, Dangers, and Treatment. C. P. Jones, Newport News, Va.
151 Physiotherapy in the Treatment of Chronic Diseases; Report of Cases. J. C. Walton, Richmond, Va.

Pennsylvania Medical Journal, Athens

July

152 The Profession and the People. T. E. Swan, Easton.
153 Poliomyelitis: Epidemiology. F. F. Urey, New Castle.
154 *Symptomatology of Acute Anterior Myelitis. J. H. McKee, Philadelphia.
155 *Treatment of Poliomyelitis. T. Diller, Pitsburg.
156 How to Prevent Spread of Disease in our Public Schools. A. C. Brooks, Wilkes-Barre.
157 *Importance of Starches in Infant Feeding. W. W. Feidt, Bellefonte.
158 Gonorrheal Ocular Metastases. E. Stieren, Pittsburg.
159 *Intracranial Complications of Otitic Origin. E. W. Day, Pittsburg.
160 *Epithelioma of the Lower Lid, with Successful Transplantation from the Arm. G. B. Jobson, Jr., Franklin.
161 *Aural and Laryngeal Complications of Typhoid, Especially as Observed in Hospital Practice. J. S. Gibb, Philadelphia.
162 *Mental Aspect of Neurasthenia. J. E. McCuaig, Erie.
162 Oral Prophylaxis from the Viewpoint of the Abdominal Surgeon. S. E. Tracy, Philadelphia.

154, 155, 157.—Abstracted in THE JOURNAL, Nov. 7, 1908, pp. 1629, 1630.

159, 160.—Abstracted in THE JOURNAL, Oct. 17, 1908, p. 1356.

161.—Published in *Monthly Cyclopedia and Med. Bulletin*, October, 1908.

162.—Abstracted in THE JOURNAL, Oct. 3, 1908, p. 1179.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 31

1 *The Belfast Medical School. Sir W. Whitla.
2 *Progressive Medicine and the Outlook on Tuberculosis. R. W. Philip.
3 *Progress in Intestinal Surgery A. E. Barker.

1. **The State of Medical Education.**—This address consists, in the main, of a historical sketch of the Belfast medical school, touching briefly on the present state of medical education, especially condemning the congestion of the curriculum. Whitla believes in the sending out of men qualified immediately to enter on the routine practice of their profession. We are, in some respects at least, behind the results obtainable in the old days of apprenticeship. He says that the preliminary and intermediate periods, amounting to three years out of the minimum of five years, must be shortened, and the clinical period of study must be increased if we are to train more efficiently, and turn men out of our teaching institutions properly equipped for their serious life work. How is this readjustment of the curriculum to be accomplished? Obviously, an enormous aid to it would be a compulsory examination in experimental physics and chemistry at matriculation. Such an examination could never dispense with the necessity of a complete academic course in these subjects; it would ensure the student having some knowledge of the principles of both sciences from the start of his college work, and enable the average young man easily to pass his further examinations in them within a period of twelve months from matriculation. Already the old notion that the stage of school life should be entirely devoted to purely literary studies is showing signs of yielding to the urgent pressure of modern ideals, which demand that boys must be trained to observe and reason on the operations of the natural forces continually manifesting their presence in the world around them. Owing, however, to the present unsatisfactory arrangements for the teaching of science in the majority of the secondary schools, little relief is immediately to be expected from this method of shortening the curriculum of the preliminary subjects, though we can confidently count on a steady improvement in the amount of elementary scientific knowledge possessed by medical candidates presenting themselves for matriculation. There is a growing conviction, amounting among those best qualified to judge aright in this matter to a consensus of opinion, that a prolongation of the period devoted to clinical studies can be achieved (without unduly lengthening the entire curriculum) only by a radical change in the method of teaching the entire group of preliminary and scientific subjects. The teaching of these subjects must be conducted with due regard to their bearing on the special requirements of the student of medicine.

2. **Progressive Medicine.**—Philip discusses fully the development of knowledge of tuberculosis, believing that it would be well to limit attention to one department, which illustrates in striking fashion the extraordinary revolution of thought which has occurred in little more than a generation.

3. **Intestinal Surgery.**—Barker gives a short review of the gradual evolution of intestinal surgery from the point of view of one who, though still in his fifties, has seen it in his own time. He says that this evolution has not been the result alone of the better conception of asepsis, much as we owe to it. Nor has it been due altogether to improved manipulative skill. It has resulted from clearer views on the vital processes concerned in all lesions within the abdomen. These we have gained partly from closer clinical observation, aided by what we have learned from the anatomist, the pathologist, bacteriologist, biologist and physicist, and from careful sifting of our experiences, whether of failure or success.

Lancet, London

July 31

4 *The Belfast Medical School. Sir W. Whitla.
5 *Progressive Medicine and the Outlook on Tuberculosis. R. W. Philip.
6 *Progress in Intestinal Surgery. A. E. Barker.
7 *Chronic Rheumatic Myositis (*Muskelschwielen*). N. S. Yawger.
8 Missed Labor Treated by Abdominal Section. C. E. Purslow.
9 Incarceration of the Appendix Containing a Foreign Body (Pin) in the Sac of an Inguinal Hernia in a Child. T. H. Kellock.
10 Angioneurotic Edema Associated with Cirrhosis of the Liver. S. G. Corner.
11 Place of the Poor-Law Medical Officer in a Unified County Medical Service. S. Webb.

4, 5, 6. See abstracts 1, 2, 3.

7. **Chronic Rheumatic Myositis.**—Yawger believes that the most frequent cause of the so-called gouty or rheumatic pain is a form of chronic myositis. Among the causes affecting this condition is heredity, there being a distinct family tendency to these diseased muscles. The effects of climate and weather are most marked. Chilly and rainy weather often causes the indurations to become painful; it is sufficient to be within the outer limits of storm conditions and not necessarily within the area of rainfall. They may appear at almost any time of life. While probably no voluntary muscle enjoys an immunity there are sites of predilection, the most common of which is in the muscles of the head and neck. This he believes is due to the exposure through lack of covering to which this part of the body is necessarily subjected. The gluteal, lumbar and deltoid regions, and calf muscles are often involved. The muscles may be invaded at their points of insertion, as in those attached to the superior curved line of the occipital bone and those inserted into the processes of the upper cervical vertebræ; or the infiltrations may appear within the bodies of the muscles as is frequently seen in the abdominal wall, and in the sternomastoid muscles near the level of the thyroid cartilage. At times the infiltration extends to the periosteum to which the muscles are attached and also to the fascia. The pathology of these diseased muscles is largely hypothetic for the reason that people do not die from this condition. The muscle infiltration may be due to the deposition of an excess of the salts of uric acid or an allied substance, with the later formation of connective tissue. Yawger has known vigorous massage treatment of a patient with extensive indurations to be followed by an attack of acute muscular rheumatism. It seems probable that this formation of indurations is a manifestation of a metabolic disturbance autotoxic in character. At all events, it appears that as soon as good circulation is established relief is at once experienced. Whatever this muscle poison is, many of its subjects have had bilious attacks in childhood, and in advanced life they often suffer from arteriosclerosis. The mistakes in diagnosis to which these rheumatic deposits give rise are very numerous. Many cases of cephalalgia are of this variety; involvement of the intercostal muscles has been taken for intercostal neuralgia and pleurisy; in the abdominal wall for acute and chronic appendicitis, gastric ulcer, abdominal and pelvic adhesions, calculus of the kidney; and floating kidney; involvement of the gluteal region for sciatica and hip-joint disease; in the neck they have been mistaken

for swollen glands. The treatment consists of a thorough course in massage.

Bristol Medico-Chirurgical Journal

June

12 Smallpox in Bristol and Neighborhood. D. S. Davies.
13 Indications for Gastroenterostomy. T. Carwardine.
14 Family with a Congenital Deformity of the Nose, and the Results of Subcutaneous Injection of Wax. E. H. E. Stack.
15 Lead Encephalopathy. J. A. James.
16 Cretinism and the Puerperium: Sequel to a Recorded History. D. A. Alexander.
17 Treatment by Ionization or Cataphoresis. H. P. Tayler and H. L. Jones.
18 Electricity in General Practice. H. P. Tayler.

Intercolonial Medical Journal of Australasia, Melbourne

June

19 Anatomic and Clinical Study of the Thoracic, Abdominal and Pelvic Viscera, as Dissected from the Back. R. J. A. Berry.
20 Bismuth Injections into Sinuses. J. Smith.
21 Ions and Electrons. S. Argyle.
22 Clinical Value of the Wassermann Test for Syphilis. K. Hiller.
23 *Cirrhosis of Liver with Ascites—Omentopexy—Recovery. E. R. White.
24 Double Coxa Vara and Tuberculous Meningoencephalitis—Recovery. E. R. White.

23. **Omentopexy.**—A girl of 9 years had had an abdominal swelling since birth, and had always worn an abdominal binder. Eighteen months ago the swelling gradually increased. She tired easily with shortness of breath on exertion. The liver was enlarged upward and downward half-way to the umbilicus, and the edge was well-defined and distinctly nodular. The spleen was also enlarged, extending four fingers' breadth below the costal margin, and there were also definite signs of ascites. Two months after admission, under chloroform, the abdomen was opened in the midline by a five-inch incision. The cavity was dried, and the liver exposed, which was of a typical hobnail type. The peritoneum over liver and spleen, and the parietal peritoneum over a corresponding area, were rubbed with gauze. The great omentum was located, and the greater portion, six inches by six inches, was stitched by catgut to the anterior parietal peritoneum. The abdominal wall was then completely closed, layer by layer. A small incision was made more laterally over the right lobe of the liver, which was exposed and then sewn to the abdominal wall by four strong catgut sutures, and the wall again closed. There was no immediate change, as the abdomen filled with fluid, and was tapped as usual three times in five weeks. In three or four weeks after operation an improvement was noticeable. The urine passed daily increased from ten ounces to twenty to thirty ounces. The abdominal measurement became less and the general condition of the child was better. Two months after the operation the child was bright and happy, and running about. There are no signs of ascites. The liver is shrinking in size.

Dublin Journal of Medical Science

July

25 Postoperative Tetanus. L. G. Gunn.
26 Use of Carbon Dioxid Snow in Dermatology. R. L. Sutton.
27 Clinical Reports of Rotunda Hospital. E. H. Tweedy, J. R. Freeland, and B. A. H. Solomons.

British Journal of Children's Diseases, London

June

28 Adenoids and Nocturnal Enuresis. L. Williams.
29 *Pulmonary Tuberculosis in Young Children. J. Miller.
30 *Congenital Hernia. J. B. Barrett.

29. **Pulmonary Tuberculosis in Young Children.**—Miller suggests the following as the simplest method of classification, and one which includes all types of the disease: 1. Disseminated metastatic tuberculosis (miliary tuberculosis). 2. Caseous bronchopneumonia, or merely caseous pneumonia. 3. Fibrocaseous pneumonia. Both of the last two conditions may be complicated by the presence of cavities.

30. **Congenital Hernia.**—In Barrett's case the hernia was a large one and never disappeared into the abdomen. It could not be reduced entirely by taxis. Attempts at reduction seemed to pain the child. Moreover, the nurse in charge said that the child would sometimes cry as if in pain. An incision was made in the usual line for inguinal hernia in children. The sac was opened and an attempt made to return the contents to the abdominal cavity. This proved difficult, and it was then discovered that the appendix was adherent to the left testicle, an unusual condition, which explained the symptoms before operation. The free end of the appendix was also adherent to the cecum, which was also in the sac. The adhesions were ligatured and cut. The appendix was removed, as it was thought that the adhesions were probably due to inflammation in it, and the contents of the sac returned to the abdomen. The internal ring was extremely large, and three sutures were employed to close the conjoined tendon to Poupart's ligament.

Journal of Obstetrics and Gynecology of British Empire, London

July

31 Primary Chorioepithelioma of the Ovary. J. S. Fairbairn.
32 *Polypoid Endometritis, Complication of Pregnancy and the Puerperium. F. A. Nyulasy.
33 Scopolamin-Morphin Narcosis in Labor. Sir J. H. Croom.
34 *Ligature of the Ovarian Vessels as Substitute for Oöphorectomy. H. M. W. Gray.
35 Epithelial Contents of a Paroöphoric Cyst. H. K. Whittingham.
36 Toxemia of Pregnancy Complicated by Rupture of Uterus. B. A. H. Solomons.
37 Gauze Drainage in Puerperal Sapremia. A. Donald.
38 Bilateral Pelvic Abscess During Pregnancy. A. Donald.
39 Adenomyoma Uteri. C. E. Purslow.
40 Eclampsia Treated by the Administration of Chloroform in the Year 1849. J. R. Fothergill.

32. **Polypoid Endometritis.**—Nyulasy believes that not only is polypoid endometritis not a malady of great rarity, but, on the contrary, is one of much frequency, attended by serious and sometimes fatal consequences, and liable to be met with in any woman during the child-bearing epoch. It accounts for much of the otherwise inexplicable mortality still occurring among puerperal women as the result of sepsis, more especially in private practice, in spite of the improved modern methods in the conduct of delivery now generally adopted. Polypoid decidual endometritis is the most important disease of the decidua, and is a frequent cause of abortion. It is a result of pre-existing chronic endometritis beginning prior to, or coincidentally with, pregnancy, and continued into the puerperium, during which acute processes are grafted on the chronic condition in consequence of septic infection. The most conclusive evidence, however, that polypoid endometritis usually commences prior to, or during pregnancy, is furnished by the fact that in many cases it is found to be distinctly syphilitic in origin, as evidenced by the history and microscopic appearances of cases examined. An interesting point is that in many instances the mothers show no external signs of constitutional syphilis, thus illustrating Colles' law; but that the mother does not become actually immune and escape serious lesions in these cases is shown by the very existence of syphilitic endometritis. During the past ten years Nyulasy met with over 100 cases in private and hospital practice, and, at the very lowest estimate, he says that it will be encountered in from 3 to 5 per cent. of all pregnancies, whether ending prematurely or at full time. Many cases of adherent placenta are due to it. In the majority of cases it is really a condition superimposed on and secondary to polypoid endometritis, for which it is usually mistaken. But from a pathologic, surgical and medicolegal standpoint, the existence of polypoid endometritis in the puerperium is of infinitely greater importance than the fact that there may be fragments of placenta adhering to the polypoid masses, because it is essential to remove these masses in order to save the life of the patient. Early curettage, by means of the ungloved finger or fingers, and a large-looped moderately sharp curette is essential for the satisfactory removal of polypoid conditions of the endometrium in the puerperal woman. By the early resort to this method such a formidable operation as hysterectomy in such cases would never be needed.

34. **Ligature of Ovarian Vessels.**—The operation advocated by Gray is performed in the following manner: The abdomen is opened by a vertical suprapubic incison, from ½ to ¾ inches to one or other side of the midline. Both layers of the sheath of the rectus and the peritoneum are opened in a corresponding line, the rectus muscle being displaced outward. Having decided that ligature of the ovarian vessels is feasible, the ovary of one side is pulled forward and away from the side of the pelvis. This makes the vessels taut and brings into evidence the "clear space" in the outer part of the broad

ligament through which fine silk ligatures (No. 1) are pulled by a handled needle or ligature carrier. If the ovaries are prolapsed into Douglas' pouch the ligatures are placed at such an interval that, when the vessels are firmly tied, the part between the ligatures resected, and the ends of the threads tied together so as to approximate the "stumps" the ovaries will lie on the brim or just immediately below the brim of the pelvis. (This procedure is similar to the usual operation for varicocele in the male). Gray prefers to arrange the ligatures, especially if the veins are varicose and tortuous, so that the ovaries are slung well up, because, owing to stretching of the vessels afterward, they tend to settle in their normal position. When the ovaries are not displaced the vessels are merely divided between two ligatures, the ends of which are tied together. If the "raw" ends of the vessels protrude, the peritoneum may be stitched over them with fine silk or catgut, so as to prevent the formation of adhesions. In cases in which there is much tension or a likelihood of postanesthetic vomiting, it is well, before tying, in order to prevent slipping, to pass one end of each ligature transversely through the leash of vessels above and below the site of ligature, respectively. In some cases adhesions under the lower part of the sigmoid flexure have to be separated in order to allow the necessary amount of vessels to be removed.

Annales de Dermatologie et de Syphiligraphie, Paris

July, X, No. 7, pp. 417-480

41 New Form of Cutaneous Discomycosis. P. Ravaut and Pinoy.
42 Ringworm in Italy. (Etat actuel des trichophyties de la province de Parme.) G. B. Dalla Favera.
43 *Roentgen-Ray Treatment of Ringworm of the Scalp. (Radiothérapie des teignes; des critiques qu'on lui a faites; des accidents qu'elle peut causer et des moyens de les prévenir.) R. Sabouraud.

43. X-Ray Treatment of Ringworm of the Scalp.—Sabouraud has been the pioneer in this line of treatment and has had five years of experience and favorable results with an annual average of 500 children thus treated. He here discusses the possible objections to the method, the danger of injury of the brain and of rendering the part exposed permanently bald. He has never witnessed anything which even remotely suggested injury of the brain in any instance, although he has kept careful watch for evidences of such. At first he did not venture to apply this treatment until the children were over 2 years old and the fontanelles closed, but later he found that this made no difference and he now applies the *x*-rays at any age. He has never observed any nervous symptoms or agitation or depression, no modification in the pulse and not even a headache in his 2,000 scalp ringworm patients thus treated. At the same time, it is easy to induce a dermatitis which may kill the hair in the part, and he warns that extreme care is necessary to avoid overexposure and that no one should apply this method of treatment unless he has well studied the technic for this special affection. A trifle of excess does no harm in Roentgen treatment of an epithelioma, but it may produce a permanent bald spot on the scalp. He measures the strength and duration of the exposures with a special pastille made with platino-cyanid of barium mixed with amyl acetate collodion. As sunlight affects it, the exposures are always made in semidarkness, and he warns that when the radiometer is taken to the light to examine it, this is liable to affect its tint misleadingly; it must also be borne in mind that while the radiometer is being examined the *x*-rays are still continuing their work on the scalp, and they thus get in more work than is indicated by the index. He gives a number of suggestions for guarding against overexposure of any one part, warning especially that restless children are liable to dislodge the protecting shields over parts that have already been sufficiently exposed, and thus give them an extra dose. If the head of the child is so small that it rounds up into the "localizing tube," this is liable to increase the dose received. Another point to be borne in mind is that previous medicinal applications to the scalp render it more sensitive to inflammation. In several cases, a localizing x marked on the skin with iodin caused a delay of three weeks in the growing of the hair over this x. The swinging of the apparatus out of the center is also liable to cause a misleading exposure as the radiometer then does not get the full force of the rays.

Bulletin de l'Académie de Médecine, Paris

July 6, LXXIII, No. 27, pp. 1-44

44 Experimental Research with Smallpox Vaccine. (De la variole-vaccine.) Kelsch.
45 *The Transthoracic Wave as Sign of Hydatid Cyst in the Liver. (Le signe du "flot transthoracique" dans les kystes hydatiques de la convexité du foie.) A. Chauffard.
46 Prophylaxis of Cattle Plague. (Prophylaxie de la peste bovine, par l'isolement individuel des contaminés.) Piot-Bey.
47 *Rabbit Eye Implanted after Clinical Enucleation. (De l'hétéroplastie orbitaire dans le but d'améliorer la prothèse.) F. Lagrange.

July 13, No. 28, pp. 45-56

48 Varying Toxicity of Acetylene Gas and Carbon Monoxid for Different Species of Animals. N. Gréhant.

July 20, No. 29, pp. 57-79

49 *Pneumonic Plague at Beyrout. (Etude sur la peste pneumonique observée à Beyrouth en janvier 1907.) H. de Brun.

45. The Transthoracic Wave as Sign of Cyst in Liver.—This sign was mentioned in the Paris Letter, July 24, page 308.

47. Graft of Rabbit Eye After Enucleation of Human Eye.—Lagrange reports that in 25 cases he has implanted a rabbit eye after enucleation of the eye of a patient, and has been able to follow the outcome to date in 13. The results have been extremely satisfactory, the eye healing aseptically in place and not shriveling more than one-half on the average, never more than two-thirds, the graft answering its purpose admirably in every instance. The engrafted eye shriveled less in the younger patients. He describes his preliminary experimental research and the technic for the operation. In 3 patients, aged 6, 20 and 28, the engrafted eye provided an elastic, living, large and permanent stump, thus rendering the conditions ideal for the artificial eye later.

49. Pneumonic Plague.—The epidemic described by de Brun comprised only four cases after the true nature of the atypical pneumonia in question was recognized, but all proved rapidly fatal, as also the few cases retrospectively diagnosed. The difficulty of diagnosing this form of plague when it first appears in a locality is the greatest obstacle in prophylaxis. Certain features of the disease suggest that the pneumonic form of plague is a special septicemic variety with coexisting variable pulmonary or bronchial lesions. This conception of pneumonic plague as a septicemia aids materially in its early differentiation, as also the absence of an initial chill, and sometimes of sharp local pain, or the pain may be experienced in some unusual location, near the apex, in the spine or axilla. The dyspnea is extreme and is accompanied by an indescribable sense of oppression in the chest, and the cough may be incessant, smothered, as if whispered, or there may be no cough at all. The expectoration may be profuse or scanty, and may suggest the sputum of bronchitis, or it may be blood-tinged and foamy, but it never resembles the rusty, tenacious sputum of pneumonia. The intense malaise and headache, pain in the chest, cough, vomiting and extreme prostration may suggest exanthematous typhus, but pneumonia is generally first thought of; the absence of the characteristic auscultation findings is ascribed to an atypical location and the physician waits for the next day to clear up the diagnosis. Then the general symptoms are more pronounced while the local symptoms are no more distinct, and the third day the patient succumbs. On the other hand, once convinced that the pneumonic form of plague is, above all, a septicemia, greater attention is paid to the general symptoms and they supply presumptive evidence in favor of plague; the stethoscope confirms this assumption even before bacteriologic diagnosis.

Grèce Médicale, Syra, Greece

June 1, XI, Nos. 11-12, pp. 25-28

50 The Authentic Authorship of Two Ancient Medical Texts. (Des noms des auteurs de deux anciens textes médicaux.) S. Zervos.

Lyon Chirurgical, Lyons

July, II, No. 2, pp. 129-260

51 Tumors of the Orbit. (22 observations de tumeurs de l'orbite.) E. Rollet.
52 Lymphadenoma of the Rectum. L. Bérard and A. Chalier.
53 Five Cases of Botryomycosis in Man. L. Thévenot and H. Alamartine.
54 Surgical Treatment of Suffocating Laryngeal Papillomas. Sargnon and Barlatier.
55 *Conservative Treatment of Sarcoma of the Long Bones. P. Cavaillon and H. Alamartine. Commenced in No. 1.
56 Best Mode of Access to Heart and Lung. (De l'abord chirurgical du cœur et du poumon.) Muller and Tavernier.

55. **Conservative Treatment of Sarcoma of the Long Bones.**—This article summarizes fourteen cases of sarcoma of the long bones treated by removal of the growth alone and thirty-three cases with resection. The results show that extensive resection of the bones, respecting the nerve and muscle apparatus, is effectual on the arm, but this technic is applicable to the leg only when the weight-bearing strength of the limb will not be impaired. A sarcoma of the femur can be resected without shortening the limb or material impairment of its strength and the same can be done for the fibula. Amputation should be reserved for the severest cases.

Presse Médicale, Paris

July 17, XVII, No. 57, pp. 505-512

57 Value of Tincture of Iodin for Antisepsis of the Skin in Experimental Surgery. E. Gley.

July 21, No. 58, pp. 513-520

58 *Repeated Cesarean Section. (L'opération Césarienne itérative.) Garipuy.
59 *Fats in Gastric Hypersecretion. (Les corps gras chez les hyperstheniques.) A. Martinet.
60 The Light Reflex in New-born Infants. (A quel moment de la vie est susceptible de se produire pour la première fois le réflexe pupillaire à la lumière.) A. Magitot.
61 Brain Extract. (Une antitoxine cérébrale.) M. Page.

July 24, No. 59, pp. 521-536

62 *Post-traumatic Nervous Disturbances. Brissaud.
63 *Death from Post-traumatic Delirium Tremens. E. Forgue and E. Jeanbrau.
64 *Final Estimation of Incapacity from Trauma of the Eye. (Consolidation dans les traumatismes oculaires.) De Lapersonne.
65 Sensory Disturbances and Industrial Accidents. (Troubles de la sensibilité et accidents du travail.) J. A. Sicard.
66 *Measurements of Parts after Industrial Accidents. (Les mensurations chez les accidentés du travail.) P. Desfosses and L. Durey.
67 Necessity for Autopsy after Industrial Accidents. M. Letulle

58. **Repeated Cesarean Section.**—Garipuy concludes from his analysis of the literature on this subject that the obstetrician should aim to perform the later Cesarean section as near to term as possible and yet before commencement of labor as with the onset of labor there is danger of rupture of the old cicatrix. There are usually scar changes and adhesions requiring modification of the classic technic, but the literature does not show that the prognosis has been aggravated by them. Four and even five successive Cesarean operations have been performed in a few cases. The question whether to remove or merely incise the uterus in a later pregnancy must be determined by the strength of the uterus wall; if it shows signs of weakness or cicatricial tissue requires resection, hysterectomy rather than Cesarean section may be advocated, for fear of rupture in a later pregnancy. Adhesions which it is impossible to separate are another argument in favor of rendering the woman sterile thereafter, preferably by resecting the tubes between two ligatures if hysterectomy is not deemed advisable.

59. **Fat in Diet in Gastric Hypersecretion.**—Martinet's experience has confirmed that of others in regard to the great benefit derived in gallstone troubles and gastric hypersecretion from the daily ingestion of from 75 to 150 c.c. of olive oil before breakfast. The only objection is the repugnance to the oil experienced by many patients, and for these he orders the needed fat in the form of fresh milk and cream, fresh butter and bone marrow. The latter is freshly cooked and spread on bread. The substitution of olive oil for butter in cooking the food is an advantage. He has also found almonds a simple and palatable means of supplying the fat; the patient is told to eat from 60 to 80 or 100 gm. of almonds according as they are fresh or old.

62. **Traumatic Neuroses.**—Brissaud passes in review the various communications on this subject at the International Industrial Accident Congress held recently at Rome. The necessity for institutional care for the victims of industrial accidents was emphasized by several speakers; special hospitals where they could receive proper treatment with due regard to rendering the subjective symptoms objective and detecting malingering were advocated. In France it is becoming more and more the custom to hasten legal proceedings, accepting a permanent but comparatively slight impairment of the earning capacity, estimated at 5, 10 or 15 per cent., and to settle damages summarily on this basis without further delay. Windscheid has declared that too large an indemnity deprives the injured of their only means of cure—the resumption of their work.

63. **Post-Traumatic Delirium Tremens.**—Forgue relates an example of death from delirium tremens after a slight fall, which, without this complication, would have been comparatively harmless. The spontaneous pain of the contusion subsided under repose by the second day but then delirium tremens developed, fatal the sixth day. He has witnessed a number of cases of this kind and discusses the question from the standpoint of accident insurance. There can be no question as to the connection between the accident and the development of the fatal complication. The verdict of a Swiss court in a similar case reduced the indemnity on account of the chronic alcoholism, stating that the life expectancy and earning capacity must be regarded as having been much below the normal. French jurisprudence does not accept this view; it disregards entirely the previous condition and seeks to determine merely whether there is a causal connection between the industrial accident and the disability or death of the injured.

64. **Duration of Incapacity in Accidents to the Eyes.**—De Lapersonne states that in 200 cases of industrial accidents to the eyes on which he had to report to the authorities, the incapacity lasted for less than a month in 25 per cent. and up to three months in 50 per cent. and he discusses the various factors affecting the final outcome. Sympathetic ophthalmia, he states, is most liable to develop after penetrating wounds of the ciliary region, with hernia or constriction of the iris, especially when complicated by the presence of a foreign body. Consequently, early diagnosis of the foreign body is of the utmost importance and also its prompt removal, especially if it is lodged in the dangerous ciliary zone. Traumatic cataract always entails more or less industrial incapacity and there is no need to wait for its extraction; he has never found that normal conditions were restored later in cases of this kind, and the settlement of the case need not be deferred in expectation of improvement later.

66. **Measurement of Parts in Cases of Industrial Accidents.**—Desfosses uses in clinical—not precision—examinations a dressmakers' tape measure, a goniometer to measure the angles of flexion and extension of the joints, and a dynamometer to register the effort in pressure and traction. In a number of illustrations he shows the way to use them and the points for measurement of parts, direction, thickness, etc., to have the records uniform for comparison and readily controlled. The results of examination of the victims of industrial accidents should be transcribed as objectively as possible, he emphasizes, as they are to be submitted to various lay parties, and the written descriptions should be accompanied by measurements and a statement as to how the measurements were taken. The comparison between the injured and the sound parts and between the same parts after certain intervals may throw light on the case and exclude malingering by objective data.

Berliner klinische Wochenschrift

July 12, XLVI, No. 28, pp. 1293-1340

68 *Phobias and Anguish States. (Psychopathologie der Angstzustände.) H. Oppenheim.
69 *Collective Appendicitis Enquiry at Berlin from Standpoint of Treatment. (Sammelforschung der Berliner medizinischen Gesellschaft betr. die Blinddarmentzündungen des Jahres 1907 in Gross-Berlin.) J. Rotter.
70 Experimental Tuberculosis in Guinea-pigs. (Prognose und Incubationsstadium bei experimenteller Meerschweintuberkulose.) H. P. Römer and K. Joseph.
71 *Anatomy, Pathology and Roentgenology of Pulmonary Tuberculosis. M. Cohn.
72 *M. Stern's Improved Technic for Seroreaction in Syphilis. (Ueber die von M. Stern vorgeschlagene Modifikation der Wassermann- A. Neisser-Bruck'schen Reaktion.) E. Melrowsky.
73 *Sugar in Relation to Formation of Glycogen. (Verhalten und Wirkung des dem Tierkörper einverleibten Traubenzuckers und seine Beziehung zur Glykogenbildung.) L. Süssenguth.
74 *Frequency of Inherited Syphilis at Berlin. J. Heller.
75 Lightning Treatment or Fulguration. (Ueber Funkenbehandlung.) F. Davidsohn.

68. **Psychotherapy.**—Oppenheim replies to Dubois' article, summarized in THE JOURNAL, August 7, page 493, endorsing his views but complaining that they do not pay sufficient at-

tention to the morbid anatomy element in anguish conditions. The disturbance is based to a greater or less extent on an abnormal excitability of the centers presiding over vasomotor functioning and the functioning of the viscera. Courage and will power may be enthroned in the brain while anguish and dread tyrannize in the cerebellum. Regard to this fact imposes caution in estimating motives, actions, properties and character manifestations, while at the same time it points the way to effectual physical measures which may restore conditions in the cerebellum to normal. The psychotherapy must be supplemented by the tried and indispensable means of influencing the excessively irritable vasomotor centers; dietetics, outdoor life, hydrotherapy, electrotherapy, gymnastic exercises, etc.

69. **The Appendicitis Collective Inquiry.**—Rotter reviews the 3,016 cases, included in the reports, from the standpoint of treatment, the conclusion being that the principle of early operation—in the first forty-eight hours—has won the victory.

71. **Roentgen Differentiation of Tuberculosis of the Lungs.**—Cohn gives the reasons for the indispensable value of *x*-ray examination in the diagnosis of affections of the lungs, to supplement other diagnostic measures. He says that it is necessary to examine the lung with three forms of exposure: (1) examination of the apices, the hilus region and the diaphragm with a medium soft tube, sagittal, from front and rear; (2) exposure of the apex with a round diaphragm showing the second and third intercostal field, in the ventrodorsal diameter; (3) exposure of the middle part of the lung with the tube at the back.

72. **The Modified Technic for Seroreaction in Syphilis.**—Meirowsky gives the findings in 318 cases tested both with the Wassermann and the Stern technics. The findings paralleled each other except that the Stern technic seems to be more sensitive while it is much simpler. He advises comparative tests with both technics, as he regards the Stern modification as an advance.

73. **Action of Injected Sugar.**—Süssenguth injected about 1 per cent. of the body weight of a 50 per cent. solution of grape sugar in his experiments on rabbits and guinea-pigs, the subcutaneous injection being repeated daily. No toxic action was apparent, and the conditions in regard to glycogen did not seem to be altered in the direction of diabetes. The findings suggest that the sugar in diabetes should not be incriminated for the symptoms to the extent some assume.

74. **Frequency of Inherited Syphilis in Berlin.**—Heller compiled this statistical article for the inauguration of the new asylum at Berlin for children with inherited syphilitic taint. The statistics are very defective, but they show a proportion of from 0.9 to 2.53 per cent. children with inherited syphilis among the younger inmates of the hospitals and asylums of Berlin. The unfavorable prognosis of inherited syphilis changes wonderfully for the better when it is recognized in time and treatment instituted at once. Welander's success in the similar institution at Stockholm encourages efforts in this line. Only two of the children inmates of his home have died since it was founded nine years ago, and an intercurrent disease was responsible for these fatalities.

Deutsche medizinische Wochenschrift, Berlin

July 15, XXXV, No. 28, pp. 1217-1256

76 *Treatment of Bronchiectasis. G. Hoppe-Seyler.
77 Rare Infectious Mononeuritis. P. L. Schlippe.
78 Sympathetic Ocular Lesions of Unknown Origin. (Okuläre Sympathicusaffektionen unbekannter Ursache.) Halben.
79 Form of Tubercle Bacillus not Taking the Ziehl Stain. G. Liebermeister.
80 Form of Lepra Bacillus not Taking the Ziehl Stain. E. Arning and F. Lewandowsky.
81 *Indications for Terminating Pregnancy in Diabetics. (Indikationen zur Unterbrechung der Schwangerschaft bei zuckerkranken Frauen.) H. Offergeld.
82 *Hyperemia from Hot Sounds in Treatment of the Urethra. (Die Hyperämiebehandlung der Harnröhre mit heissen Sonden.) M. Porosz.

76. **Treatment of Bronchiectasis.**—Hoppe-Seyler lays great stress on the prophylaxis of bronchiectasis and urges that this should be borne in mind in all cases of bronchitis, especially in the aged. Every effort should be made to ensure complete evacuation of the secretion from the air passages. In the elderly the reduced sensitiveness of the bronchi, the less elastic thorax and lungs and the weakness of the chest muscles, all cooperate in preventing ample expectoration. Such patients should make copious use of stimulant expectorants, and they should be made to change their position often, reclining at times horizontally or with the pelvis raised to promote expulsion of the secretions. When resolution drags in pneumonia, the patients should use breathing exercises and lie on the sound side to prevent consolidation and stiffening of the lung tissue which hampers evacuation of the bronchial secretions. Early evacuation of pleural effusions will aid in preventing development of adhesions. Chronic bronchitis should be healed or kept under control with turpentine and creosote derivatives. Treatmenf of the cylindrical form of bronchiectasis is the same as of chronic bronchitis; benefit may be derived from breathing exercises supplemented by compression of the lower part of the chest; this the patient can do himself by putting his hands on the sides of his chest, and bending far over, as if bowing low, the forcing up of the diaphragm in consequence thus exercising the lower part of the lung. In sacculated bronchiectasis of the lower lobe it is difficult to evacuate the secretion, but this can be promoted by reclining slanting, the shoulders low, or even the true Trendelenburg position. This is sometimes surprisingly effectual and the patients should train themselves to recline in this slanting position an hour or so morning and night or even longer, changing from side to side until the position is found in which most copious evacuation occurs. It can be promoted by compression of the region involved. If the patients are not too weak, out of door exercise and climbing will benefit by the greater respiratory demands. Inhalation of fumes of turpentine poured on boiling water may aid in softening and expelling the sputum. If operative measures become necessary, his experience speaks in favor of mobilization of the chest wall by extensive resection of ribs, thus allowing it to sink in and compress the lung, closing up the formerly gaping cavities. This should be followed by inhalations and breathing exercises, opening into and draining the cavities as the last resort.

81. **Pregnancy in Diabetics.**—Offergeld states that 30 per cent. of 57 diabetic women died in coma during or soon after a childbirth, and 14 others died during the fourteen months following, either from the diabetes or from complicating pulmonary tuberculosis—a total mortality of 50 per cent. in 57 cases; 51 per cent. of the children were stillborn, 11 per cent. died soon after birth, and 7 per cent. died in infancy from hydrocephalus or diabetes—a mortality of over 66 per cent. In the 25 cases in which the fetus succumbed, 17 of the women died in coma. It is thus evident that the diabetes and the pregnancy have a most unfortunate influence on each other, but it is possible to avert evil consequences in the mild and moderately severe cases in many instances by dietetic measures, bearing in mind the requirements of the growing fetus in respect to needed calories. If the diabetes becomes aggravated by the pregnancy, the tolerance reduced, the patient losing weight, and the subjective symptoms becoming aggravated, the woman should be delivered from the stress of the pregnancy; acidosis alone does not indicate this unless it is constantly accompanied by albumin and tube casts. The course in previous pregnancies is an important guide to treatment. Coma is generally preceded by certain premonitory symptoms, acidosis and increase in the ammonium salts, and consequently the latter may prove of decisive importance under certain conditions. Coma once installed, the fetus inevitably succumbs and as the coma determines the outcome there is no necessity for interrupting the pregnancy, but if labor is under way the woman should be delivered rapidly and with the least possible effort. Diabetic parturients do not seem more exposed to infection or more disposed to hemorrhage than normal women. General anesthesia should be avoided if possible, but ether should be given the preference if such becomes necessary.

82. **Hot Sounds in Hyperemic Treatment of Urethritis.**—Porosz uses a sound arranged to permit a current of hot water to flow through it without escaping into the urethra. The hyperemia thus induced softens and loosens the tissues and aids in dilatation of the stricture.

Deutsche Zeitschrift für Chirurgie, Leipsic

June, XCIX, Nos. 1-2, pp. 1-199

83 *Pathologic Histology and Clinical Experiences with Varicocele. E. K. Istomin.
84 *Transplantation of Vessels and Entire Organs. (Transplantation von Gefässen und ganzen Organen.) Borst and Enderlen.
85 *Operation for Recurrence of Trigeminal Neuralgia. (Rezidivoperation bei Trigeminusneuralgie.) K. Budinger.
86 *Pathogenesis and Treatment of Felon. (Knochenpanaritien.) W. Ohm.
87 *Case of Gangrene of the Leg after Constriction by Momburg's Belt. (Fall von Gangrän des Beins nach Unterbindung der Arter. femoralis unter Momburgscher Blutleere.) F. Kempf.

83. **Varicocele.**—Istomin reviews the anatomy and histology of the spermatic veins and the importance of mechanical factors in the origin and the cure of varicocele. A suspensory and dietetic measures should be tried first in all cases; if they fail, an operation should be advised, and this should aim to form an "internal suspensory." Resection of the vein is justified only after other measures have failed to induce a permanent cure. The resection should not be done in the scrotum but in the inguinal ring. He warns that the wearing of a suspensory may increase a tendency to hypochondria, and that extreme hypochondria should contraindicate an operation for the time being, as such surgery on the mentally unsound may result in harm both for patient and surgeon. In conclusion he advocates a technic which he found beneficial in the two cases in which he has applied it. Through a small longitudinal incision in the tunica vaginalis at the inguinal ring he passed a thread through the spermatic cord and through the cellular tissue on the anterior surface of the pubis just below the ring, tying it there while two other sutures held the tunica vaginalis to the external and internal pillars of the inguinal ring. The central portion of the spermatic cord was readily reduced through the inguinal ring while the sutures held the testis at the desired height and they were in such firm tissues that there was no danger of their pulling out. A bibliography of 193 titles is appended.

84. **Transplantation of Entire Organs.**—In 7 animals the carotid and thyroid gland were reimplanted in the same dog and in 6 were transplanted into another dog, while in 7 an artery and kidney were reimplanted in the same animal and in 6 in another animal, with 5 operations on vessels alone. The early and ultimate findings are listed; they show that transplantation on the same animal alone promises complete restoration of function.

85. **Trigeminal Neuralgia.**—Büdinger reports the complete cure for three and a half years to date after an operation for recurrence of trigeminal neuralgia a few months after a primary peripheral and ineffectual operation. The oval foramen was opened and the neuroma-like enlargement of the central stump was released from its confined bed and the nerve resected from the base of the skull to the ganglion. The oval foramen was then plugged with bone to prevent regeneration.

86. **Treatment of Felon.**—At Bier's clinic a felon is regarded as a traumatic inflammation originating in the subcutaneous tissue from invasion of bacteria through some possibly insignificant lesion, but soon involving the periosteum. Under constriction hyperemia the process healed in an average of 23.5 days in 33 cases; under suction hyperemic treatment in 35.5 days in 20 cases, and in 40.3 days in 12 cases treated by ordinary operative measures. The induced hyperemia reduces the pain at once and permanently and the bone is protected against sequester formation or the sequester heals into place again. The functional outcome was also better under conservative than operative measures. Skiagrams of a number of the cases are given, the final conclusions being in favor of a minute incision with constriction or suction hyperemia as superior to all other methods of treatment, assisting the organism in its struggle against the infection, promoting natural healing processes and best ensuring a good functional outcome.

87. **Gangrene After Application of Momburg Belt to Arrest Hemorrhage.**—The gangrene developed a week after resection of 3 cm. of the femoral artery on account of injury from a pitchfork, a handbreadth below Poupart's ligament. The patient was a young man and he had lost much blood before the operation. It might have been better, Kempf remarks, if collateral circulation had been promoted by saline infusion before attempting the operation or afterward, but this was not deemed necessary at the time. The operation was completed in twenty minutes, but as the tourniquet first applied interfered with the operation, the rubber tube was wound around the waist according to Momburg's technic. It gave no better results, however, than an ordinary tourniquet from the standpoint of development of gangrene.

Medizinische Klinik, Berlin

July 11, V, No. 28, pp. 1029-1067

88 *Diagnosis of Tuberculous Etiology in Ophthalmology. W. Löhlein.
89 Immunity to Tumors. (Ueber Immunität gegen Geschwülste.) E. v. Dungern.
90 Treatment of Surgical Tuberculosis with Marmorek's Serum. W. E. Sikemeier.
91 *Diffuse Peritonitis after Appendicitis. (Zur Pathologie und Therapie der freien ausgedehnten Bauchfellentzündung nach Wurmfortsatzentzündung.) Bertelsmann.
92 Elephantiasis of Syphilitic Origin. G. Morawetz.
93 Importance of Antitrypsin Test of Blood in Diagnosis and Prognosis of Anemia. (Wert der Antitrypsinbestimmung des Blutes für Diagnose und Prognose der Anämie, und die Einwirkung des Arsenwassers.) F. Brenner.
94 Viscosity of the Blood. (Viskosität des Blutes beim Gesunden und Kranken.) G. Jorns.

July 18, No. 29, pp. 1068-1104

95 *Treatment of Trigeminal Neuralgia. A. Fuchs.
96 Scarlatiniform Exanthem with Acute Tonsillitis. (Scharlachähnliche Exantheme bei akuten Halsentzündungen.) F. Reiche.
97 Traumatic Meningitis from *Streptococcus mucosus*. R. Rube.
98 Treatment of Acute Otitis to Prevent its becoming Chronic. A. Hillebrecht.
99 Importance of Balneologic Research for General Practice. (Bedeutung der neueren balneologischen Forschungsergebnisse für die Praxis.) P. Mayer.
100 Prevention of Fluctuations in Tension of Galvanic Current. (Ueber Spannungsschwankungen der von Gleichstromdynamos zu elektrotherapeutischen Zwecken—Galvanisation—entnommenen Ströme und deren Beseitigung mittels Kondensators.) A. Eulenburg.

88. **Diagnosis of Tuberculous Eye Affections.**—Löhlein declares that the new local tuberculin tests show that tuberculosis is a much more frequent and important factor in eye affections than has been previously recognized. He disapproves completely of the ocular tuberculin test as liable to do damage. The preferable technic seems to be to apply first the cutaneous test; a negative reaction seems to exclude tuberculosis. The subcutaneous technic is the most valuable and reliable. The cutaneous test first, followed by the subcutaneous allows surprising insight into the nature of ocular lesions.

91. **Treatment of Peritonitis.**—Bertelsmann discusses mainly the diffuse peritonitis following appendicitis, commenting on the fact that the serous surface of the peritoneum covers an area of 1.7 square meters and yet it does not absorb bacteria, when inflamed, while tendon sheaths and joints take up bacteria in swarms and pour them into the blood. It can not be a mere coincidence that Kanon, Libmann and Bertelsmann found no bacteria in the blood in fully 100 cases of intense peritonitis. The collapse can not be due to the bacteria but merely to the toxins; they are responsible for the local injuries, the paralysis of the bowel and the tympany. The toxins act on the vasomotors in the splanchnic region, paralyzing them until the organism becomes exsanguinated by the pouring of all the blood into the abdominal vessels. The heart fails because it has nothing to pump, and death is the result of the paralysis of the vasomotor center and not of paralysis of the heart. This is of immense importance in treatment, as saline infusion will start up the heart and force along the blood stagnating in the splanchnic region. Before the operation a saline infusion should be made as a preventive measure; otherwise the opening of the abdomen releases the paralyzed vessels of the splanchnic region from pressure, allowing them to suck up the rest of the blood which has been keeping the patient alive. This is the cause of the "peritoneal collapse." Bertelsmann is convinced that the patient can be tided past the stage of collapse in almost every case of peritonitis by intravenous infusion of from 3 to 4 quarts of salt solution with or without 7 drops of adrenalin. The saline infusion permits longer operations. In 72 cases of severe peritonitis in the last five years, 80 per cent. of the patients recovered under treatment along these lines, the operation concluded by stimulating peristalsis with enemas and local heat, finishing with lavage of the stomach if necessary.

95. **Treatment of Trigeminal Neuralgia.**—Fuchs has obtained good results in 16 cases of exceptionally severe trigeminal

neuralgia and also in 100 moderate cases by treatment with aconitin and vigorous purgation. The aconitin seems to have actual specific efficacy in trigeminal neuralgia. He prefers to give it in the form of eight or ten pills containing a maximum of 0.002 gm. for the daily dose. It is supplemented with calomel, 15 grains in ten doses in ten hours (0.1 gm. per dose), continuing afterward with a laxative water three times a day. In giving the aconitin he inquires constantly for signs of intoxication, paresthesia in tongue, lips or hands, mostly in the ulnar region, but has never observed anything of the kind, probably on account of the vigorous purgation which he regards as the greatest advance in the treatment of neuralgia in the last quarter century. In 14 of the above 16 cases the neuralgia had recurred after peripheral resection. The pain is probably of central origin in certain cases which explains the inefficiency of treatment, even of gasserectomy. On the other hand, peripheral resection and injections may induce temporary benefit.

Münchener medizinische Wochenschrift

July 13, LVI, No. 28, pp. 1409-1456

101 Diagnosis and Treatment of Subphrenic Abscess on Left Side. Meisel.
102 *Mobilization of Chest Walls. (Ueber Mobilisierung des Brustkorbes.) J. Fränkel.
103 *Clinical Hypersusceptibility. (Klinische Ueberempfindlichkeit. II. Oertliche Hautreaktionen auf Atoxyl.) E. Moro and H. Stheeman.
104 Importance of Precipitation of Lecithin with Cancer. (Bedeutung der Lezithinausflockung bei malignen Tumoren.) F. Schenk.
105 *Ocular Typhoid Extract Reaction in Typhoid. (Die Chantemessesche Ophthalmoreaktion bei Typhuskranken.) J. K. Beckers.
106 *Treatment of Suppurative Processes with Antiferment. (Ferment- und Antifermentbehandlung eitriger Prozesse.) A. Kantorowicz.
107 Implantation of Cornea from the Horse in the Cornea of the Rabbit. (Zur Keratoplastikfrage.) Salzer.
108 Paratyphoid Infection. (Zur Kasuistik der Paratyphusinfektion.) A. Bingel.

102. **Mobilization of the Thorax.**—This communication from Bier's clinic at Berlin calls attention to the importance of mobilizing the thoracic vertebræ in attempts to expand and mobilize the chest. This element in the mobilization has been rather overlooked hitherto; the purpose is admirably accomplished by Klapp's creeping exercises. This method was described in THE JOURNAL, Feb. 1, 1908, page 410, as giving good results in scoliosis. It answered the same purpose as Freund's chondrotomy to mobilize the superior aperture as a means of influencing apical processes. The creeping method is deserving of wide application outside of the treatment of scoliosis. The exercise found most effectual for mobilizing the thoracic vertebræ starts with lordosis, the attitude similar to that of a creeping tiger or dachshund. The patient kneels, the thighs perpendicular, the elbows bent so that the arms imitate the bow-leg position of the dachshund while the head is bent far back. The pelvis is thus above the shoulders and the thoracic portion of the spine is in lordosis; this position must be maintained during the creeping. The arm is advanced and stretched before the hand touches the floor. This hand then turns and the elbow is bent as the trunk is advanced until the upper arm forms a right angle with the trunk. The arm thus forms the axis over which the thoracic vertebræ are levered by the drawing forward of the other arm, the scapula of the supporting arm forming the fulcrum of the lever. This exercise loosens up the thoracic vertebræ and spreads the ribs apart, and corrects torsion of the spine if present. The thorax expands more, the more correctly the lordosis of the thoracic vertebræ is localized during the sideward bend. The expansion of the chest under the influence of this creeping exercise can be followed with the *x*-rays. A number of such skiagrams are to be published in the transactions of the recent congress of orthopedic surgery at Berlin. The expansion of the chest provides better conditions for the large vessels and lungs, and is an important aid in the prophylaxis of disturbances in the circulation and of tuberculous apical processes.

103. **Local Cutaneous Reaction to Atoxyl.**—Moro noticed a local reaction in children injected with atoxyl; it resembled the cutaneous tuberculin reaction and paralleled it in 82 per cent. of the positive and 85 per cent. of the negative primary reactions to this Pirquet test. Repeated injection gave a more intensive and more rapid reaction than the first in 6 of 13 children injected several times. The other 58 children were given only a single injection.

105. **The Ocular Typhoid Reaction.**—Beckers reports application of Chantemesse's ocular typhoid toxin reaction in 30 patients with various affections and 8 typhoid patients. The instillation of a minute drop of typhoid toxin caused no reaction in 30 non-typhoid patients and none in the healthy, but there was a specific reaction in 7 of the 8 typhoid patients and in 6 out of 9 typhoid convalescents. These experiences confirm the specific importance of the test when applied with minute amounts; he does not use more than half the dose that Chantemesse recommends.

106. **Antiferment Treatment of Suppurative Processes.**—This communication from Garré's clinic at Bonn lauds the antiferment treatment of abscesses as a valuable measure. The principles were described in THE JOURNAL, Feb. 6, 1909, page 516. Müller's discovery of the proteolytic ferment in the leucocytes showed that the latter and their enzymes have an injurious action in an abscess; the excess of ferment breaks down the tissues, doing more harm than the bacteria themselves. The incision evacuating this excess of ferment acts as effectually as the antiferment which neutralizes the ferment, but the latter penetrates into the abscess walls, protecting the already infiltrated tissue from destruction by the leucocyte ferment while the defensive forces of the body attend to the destruction of the bacteria. The antiferment treatment thus protects the leucocytes from autolysis and protects the tissues from heterolysis by the leucocytes. The aim in tuberculous processes is just the reverse; here there is deficiency of the ferment, and the indication is to supply it from without. Trypsin has been used for the purpose as it is so closely allied to the leucocyte ferment and so readily obtainable. For the antiferment, Garré found that hydrocele fluid answered the purpose admirably. The results of this method of treatment are immediate arrest of the secretion, confirming the fact that the free ferment is the irritation that kept up the secretion. This, he asserts, causes us to revise our views in regard to laudable pus. Kantorowicz gives several examples of the effect in localized abscesses. In mastitis, furuncles and phlegmons the results were disappointing as the indispensable condition—direct contact between the living ferment and the antiferment—can not always be realized in these cases. The trypsin injections in the cold abscesses answered the desired purpose except in bone processes. The trypsin is indifferent to bone, and consequently chemotactic iodoform is more efficient than trypsin in bone lesions. The trypsin also proved effectual in cleaning up wounds; necrotic scraps were thrown off more rapidly, but this effect was observed only in the drier forms, never when there was much suppuration. The whole antiferment conception modifies previous views in regard to suppuration in many points, he adds, but the success of the treatment under proper conditions will convert the most skeptical.

Therapie der Gegenwart, Berlin

July, L, No. 7, pp. 313-360

109 *Acute Perisigmoiditis with Effusion. H. Strauss.
110 Oxygenated Baths. (Studien über Sauerstoffbäder.) F. Scholz.
111 *Increased Uric Acid Production from Coffee and Methyl-Xanthin in the Healthy and in the Gouty. (Harnsäurevermehrende Wirkung des Kaffees und der Methylxanthine.) Besser.
112 Treatment of Certain Forms of Heart and Kidney Disease. (Zur Therapie gewisser Herz- und Brightischer Krankheiten.) H. Naegeli and P. Vernier.
113 *Permeability of Renal Filter. (Dichtigkeit des Nierenfilters.) J. Brodzki.
114 *Anesthetic and Antiphlogistic Action of Guaiacol. Hecht.
115 Successful Conservative Treatment of Extreme Prolapse of Rectum. (Ueber einen konservativ behandelten Fall von hochgradigem Mastdarmvorfall.) K. Bieling.

109. **Acute Perisigmoiditis.**—Strauss relates some case-histories of acute inflammation of the serosa of the sigmoid flexure, the syndrome having as great clinical importance, notwithstanding its rarity, as perityphlitis, which it much resembles. The anamnesis is of importance, especially a history of chronic diarrheic conditions and signs of ulcerative colitis; also a tendency to coprostasis, especially when alternating with diarrhea. Differentiation is important for treatment as the chief indication is to empty the colon and cure the pre-

existing ulcerative colitis if such exists; otherwise the main reliance is on strict bed rest, light fluid diet and local application of ice and morphin. Surgical intervention is not so promptly necessary as in an appendicitic process, at least in the endogenous cases, as a rule. In two such cases on record, the acute endogenous exudative perisigmoiditis healed after perforation into the intestine, but in one of his fatal cases peritonitis followed the perforation. In considering the indications it must be borne in mind that in the majority of cases the disturbance is secondary to appendicitis.

111. **Coffee in Production of Uric Acid.**—Besser relates research which confirms the fact that part of the caffein and theobromin is eliminated as uric acid, and consequently that coffee must be included in the purin-containing substances injurious in the diet of the gouty.

113. **The Permeability of the Renal Filter.**—Brodzki expatiates on the importance of throwing light on dietetic questions by pathologic experiments in order to obtain data for applying dietetic factors from a therapeutic point of view. For this purpose he has been giving 20 or 25 gm. (from 300 to 375 grs.) milk sugar in water in the morning in forty cases of various kidney affections, keeping this up for ten or fourteen weeks. In the cases with a tendency to much albuminuria the amount of urine increased and the edema and albuminuria became reduced, which he ascribes to the influence of the milk sugar in great measure. There was little, if any, increase in the reducing property of the urine in these cases, but in the others with only moderate glycosuria the reducing property rapidly increased. In a few cases of stationary contracted kidney the increase in the specific gravity was evidently also a result of the milk sugar.

114. **Guaiacol as an Anesthetic and Antiphlogistic.**—Hecht regrets that guaiacol is not used more for external application as its properties deserve. He reviews its history in local treatment of neuralgia, neuritis, gout, chronic rheumatism and traumatism, in the form of a salve, and for application to the surface of the chest in lung, pleura and febrile affections. He advocates a 10 per cent. solution or salve and reports excellent results from it in various cutaneous lesions, including erysipelas, furuncles and herpes zoster. There are no untoward by-effects unless too large doses are used, over 1.5 or 3 gm. (22.5 or 45 grs.).

Wiener klinische Wochenschrift, Vienna

July 15, XXII, No. 28, pp. 989-1022

116 *Determination of Anaphylactic Antibody in Serum of Persons with Cancer. (Nachweis eines gegen das eigene Karzinom gerichteten anaphylaktischen Antikörpers im Serum von Krebskranken nebst vorläufigen Bemerkungen zu diesem Befunde.) H. Pfeiffer and J. Finsterer.
117 *Several Years' Supervision of 1,000 Troops Injected in 1901-02 with Tuberculin for Diagnostic Purposes. K. Franz.
118 *Porges' Precipitation Reaction Serum. (Ueber die Ausflockungsreaktion nach Porges.) R. T. Schwarzwald.
119 Frequency of Helminthiasis with Gastrointestinal Cancer. (Häufigkeit von Eingeweidewürmern bei Krebsen des Verdauungstraktus.) G. Kelling.
120 *Transient Painful Pseudoparalysis in Infants. M. Turnowsky.
121 Importance of Rhinology and Laryngology for Internal Medicine. (Bedeutung der Rhinologie und Laryngologie für die interne Diagnostik und Therapie.) E. Glas.

116. **Anaphylactic Seroreaction with Cancer.**—Pfeiffer and Finsterer confirm the constant occurrence of the anaphylactic drop in the temperature in their experimental research, and report further experiments with guinea-pigs treated with carcinoma juice. The results show that in the course of a cancer antibodies develop which induce anaphylaxis when injected into guinea-pigs. Guinea-pigs untreated or previously treated with normal human serum show no signs of anaphylaxis when injected with juice from carcinoma tissue. On the other hand, guinea-pigs injected forty-eight hours before with serum from the cancer patient and then injected with the cancer juice display severe anaphylactic symptoms, among others, the characteristic and easily measured anaphylactic drop in temperature. The anaphylactic shock occurs not only with the serum of the cancer patient from whom the juice was derived, but also with serum from other carcinoma patients. The serum in cancer cases, therefore, is distinguished from normal serum by the presence of anaphylactic antibodies. This antibody injected into the peritoneum of the guinea-pig transmits a passive anaphylaxis demonstrated in the drop of temperature when cancer juice is injected, which may prove to have differential value. The discovery of this anaphylactic property in a patient with tumor confirms the diagnosis of malignant disease. If the anaphylactic condition permanently vanishes after removal of the tumor the cure may be regarded as definite. Reappearance of the anaphylactic antibody should be an indication for renewed intervention. It is possible that the discovery of this antibody may throw light on the nature of cancer. The hypersusceptibility revealed by the presence of an anaphylactic antibody explains the unrestricted growth of the tumor and the possibility of metastasis—not only the serum but all the cells and tissues become hypersusceptible while the lack of this with benign tumors explains their inability to spread. If these premises are correct, the aim in treatment of cancer must be to put an end to the anaphylactic condition. This would prevent the spread of the malignant disease and influence the cancer without surgical intervention.

117. **Seven Years' Observation of 1,000 Soldiers After the Tuberculin Test.**—Franz reports the subcutaneous tuberculin test applied to a thousand recruits during 1902; the Hungarians gave 38.7 per cent. positive responses and the Bosnians from 61 to 76 per cent. None but the more robust was tested and only a small proportion of those giving a positive response have shown any signs of tuberculosis during the years since, only 46 during the first three years and 18 in the fourth; a total of 64 cases of clinical tuberculosis in 575 responding positively out of 1,002 tested. His experience further shows that the test with 0.003 gm. of tuberculin is not enough to reveal a latent tuberculous process in many cases by subcutaneous application. He is convinced that if he had used 0.01 gm. he would have obtained as many positive findings as Naegeli obtained in cadavers.

118. **Porges Precipitation Reaction in Syphilis.**—Schwarzwald has applied this test in 302 cases of syphilis with 22 controls and commends it as a simple and easy technic for differentiation in dubious cases. He used 0.5 per cent. solution of sodium glycocholate and advocates this test first and the Wassermann test only when the first gives a negative response.

120. **Transient Painful Infantile Pseudoparalysis.**—Turnowsky has encountered six cases of this affection during the last fifteen years. The children were from 15 months to 4 years old and the paralysis of the leg and arm came on suddenly with severe pain but no fever. The child dragged the limb and screamed when it was touched. The paralysis vanished in from one to five days as suddenly as it came on, but recurred three times in the course of a month or six weeks in 2 cases. He reviews the literature on the subject with the conflicting views in regard to the origin of the trouble; he explains it as a sudden slight dislocation in a joint by some abrupt movement, the dislocation being too slight to be detected by external examination.

Zeitschrift für klinische Medizin, Berlin

LXVIII, Nos. 3-4, pp. 177-348. Last indexed June 12, p. 1965

122 Gas and Corpuscle Content of Blood Mainly Responsible for its Viscosity. (Zur Viskosität des Blutes.) H. Adam.
123 *Pathology of Vegetative Nervous System. II and III. H. Eppinger and L. Hess.
124 Alternating Pulse. (Wesen des Herzalternans.) T. Rehberg.
125 *Testing of Pancreatic Secretion and its Importance for Diagnosis. (Zur Prüfung der Pankreassekretion.) E. von Koziczkowsky.
126 *Action of Fever on the Course of Infection. (Wirkung des Fiebers auf den Verlauf der Infektion.) V. Barankeleff.
127 Purin Metabolism during Fever. (Zur Kenntniss des Purinstoffwechsels im Fieber.) D. Jonescu and V. Grünberger.
128 Iron Metabolism. (Untersuchungen über den Eisenstoffwechsel.) H. Schirokauer.
129 *Auscultation of Bronchial Breathing over the Thorax as Sign of Mediastinal Tumor or Aneurism. (Die Auskultation des Bronchialatmens auf dem Thorax als Zeichen einiger Mediastinalaffektionen.) L. D'Amato.
130 Unreliability of Stain Serodiagnosis in Syphilis. (Ueber die Schürmannsche Farbenreaktion bei Lues.) A. Braunstein.

123. **Pathology and Therapeutics of the "Vegetative" Nervous System.**—THE JOURNAL, Oct. 24, 1908, page 1475, mentioned previous research by Eppinger on the opposite pharmacologic action of certain drugs on different individuals. Certain persons are susceptible to the action of pilocarpin and atropin, both of which act on the vagus sustem, the former stimulating, the other inhibiting it, while other persons are susceptible

to adrenalin which acts on the sympathetic nervous system. To date no drug is known which has an inhibiting influence exclusively on the sympathetic system, similar to the inhibiting action of atropin on the vagus. By testing the action of pilocarpin and atropin and adrenalin it is possible to obtain an insight into the functioning of organs innervated by the vagus or sympathetic systems and Eppinger reviews the findings in a number of morbid conditions such as paroxysmal tachycardia, digestive reflex neuroses, Gowers' vasovagal attacks, etc. He cites two examples to show how in "vagotonic" individuals 0.0075 gm. of pilocarpin injected subcutaneously induces intense salivation, sweating and lachrymation with redness of face and neck, and 0.00075 gm. atropin sends the pulse from 80 up to 138, while 0.0075 gm. adrenalin fails to induce its usual effect of glycosuria and polyuria. In two examples of the "sympathecotonic" type, 0.01 gm. of pilocarpin and 0.001 gm. of atropin had no influence on saliva, sweat, tear secretion or pulse, but 0.001 gm. adrenalin induced pronounced glycosuria (7.93 gm. in the twenty-four hours' urine) and the amount of urine increased from 1200 to 2300 c.c. and from 1200 to 2800 c.c. In neuroses of the vagus minute amounts of "vagotropic" drugs have a marked therapeutic influence. In all his experience he has never found an individual who presented a pronounced reaction both to pilocarpin and to adrenalin. The "vagotonic" are more numerous among the young while with increasing age the "sympathecotonic" type predominates. Exophthalmic goiter is studied in detail from the standpoint of these pharmacologic functional tests, showing the difference in the symptoms and therapeutic response accordingly as the individual is vagotonic or sympathecotonic.

125. **Secreting Function of the Pancreas and Its Importance for Diagnosis.**—This communication relates functional tests of the pancreas undertaken with eighty patients with various affections. The patients drank 150 c.c. of oil, or 250 gm. of cream, fasting in the morning and sat still for forty-five minutes, after which the stomach content was siphoned out. In 43 of the 80 cases trypsin was found directly in the stomach content and in 29 others after the excess of acid had been neutralized with magnesia. In only 8 of the total number was there no trace of trypsin to be detected; these were patients with inoperable gastric cancer, diabetes, pernicious anemia or some severe liver affection. The smallest proportions of trypsin were found in patients with these affections or catarrh of the small intestine, cholelithiasis or diabetes insipidus. The largest proportions were in patients with little if any free hydrochloric acid in the stomach content. The trypsin was always in the activated form, showing that it had been mixed with intestinal juice. The test is more instructive when a series of examinations are made, constant absence of minute proportions of trypsin suggesting severe functional disturbance in the pancreas, while large amounts exclude such. The oil or cream breakfast also allows insight into the functioning of the liver from the proportion of bile found in the stomach content, and it reveals the admixture of intestinal juice and trypsin and thus explains anacid conditions. The presence of trypsin also is an index of the motor functioning of this part of the digestive tract. The research related shows further the importance of excluding fat from the test breakfast when examining merely for the chemical and motor functioning of the stomach.

126. **Action of Fever on Course of Infections.**—Barankeieff induced fever in rabbits by puncture of a heat center and then inoculated them with some mildly infectious agent, the results demonstrating that fever reduces materially the resisting power of the organism so that it yields to invasion and proliferation of bacteria of greatly attenuated virulence. It also reduces the immunity possessed naturally by rabbits against certain germs and the febrile organism also displays an exceptional tendency to autoinfection.

129. **Auscultation of Bronchial Respiration Over the Thorax as Sign of Mediastinal Lesion.**—D'Amato reports three cases of solid tumors in the mediastinum and five of aneurism or other lesion in which bronchial respiration was heard not only over the manubrium but over the body of the sternum and at times over the heart region, but less distinct. It was also heard diffuse over the clavicles, and most pronounced over the spine, even with tranquil breathing, with a much louder tone and over a much wider area than in normal conditions. In one case of solid tumor the bronchial respiration was heard over both the anterior chest walls. The positive auscultation findings over the spine with these mediastinal lesions has considerable differential importance both for children and for adults; the greatest intensity of the respiration sound is directly over the spine, not in the scapulovertebral line. Such findings in the apparently healthy do not disprove their differential importance as there may be some unsuspected lesion in the peribronchial glands, possibly long healed over. The positive findings are not constant with all mediastinal tumors, etc., but depend on their location and the consequent displacement of the trachea and bronchi.

Zentralblatt für Chirurgie, Leipsic

July 17, XXXVI, No. 29, pp. 1069-1040

131 Technic of Endothoracal Resection of the Esophagus. M. Tiegel.
132 *Method of Operating on Femoral Hernia. (Neue Methode für die operative Behandlung der Femoralhernien.) Abrashanoff.

July 24, No. 30, pp. 1041-1072

133 *Ligation of Veins for Suppurative Portal Thrombosis after Appendicitis. Wilms.

132. **Operative Treatment of Femoral Hernia.**—Abrashanoff ties a long silk suture thread around the neck of the hernial sac after it has been emptied and draws each end of the thread out through the abdominal wall about three-quarters of an inch above Poupart's ligament, the distance between the emerging points of the ends of the thread being from one-half to three-quarters of an inch. Poupart's ligament is them drawn up and back to expose the posterior margin of the horizontal branch of the os pubis, and each end of the thread is passed through the triangular ligament. As the ends of the threads are then tied together, the hernial sac is drawn up tight and the peritoneum is also stretched, while the abdominal wall is drawn down to the os pubis on which Poupart's ligament rests. By this means the femoral canal is practically obliterated throughout its entire length. He has performed this operation in eight cases and commends it as effectual and stable. The technic is shown in three illustrations.

133. **Ligation of Veins in Suppurative Thrombosis of the Portal Vein.**—Wilms tied off the veins in the mesentery connected with the cecum and appendix and was surprised to find that all the serious symptoms were arrested at once and the patient rapidly recovered. The principle is the same as for ligation of the ovarian veins in puerperal pyemia, but in suppurative portal thrombosis the danger of metastasis in the liver is especially imminent. He is not aware of a single instance of spontaneous recovery in such cases with recurring rigors. All his patients with this syndrome succumbed, but it is becoming less frequent now that early operations in appendicitis forestall the development of the venous thrombosis. In his case an abscess in the region of the cecum in a man of 42 had developed in the course of ten days and chills occurred daily after evacuation, with temperature over 104 the fourth day. In the triangle formed by the junction of colon and cecum two small arteries were tied separately and the veins ligated in two bunches, the line of ligation forming the hypothenuse of a triangle of which the junction of colon and cecum formed the other two sides. The temperature dropped at once and no further chills were observed while the circulation in the intestines showed no signs of disturbance and stool was passed the next day. The operation is effectual only before infectious emboli have reached the liver; the chills may indicate merely toxic action. Even if a few bacteria have entered the circulation the organism in many cases is able to cope with them. It does not succumb until its power of producing antitoxins has become exhausted.

Zentralblatt für Gynâkologie, Leipsic

July 17, XXXIII, No. 29, pp. 1009-1024

134 The Rachiotome and Rachiotomy. (Rachiotom.) O. Küstner.
135 Bacteriologic Diagnosis of Puerperal Fever. W. Sigwart.
136 Influence of Delivery on Muscular Supports of Pelvic Floor (Einfluss der Geburt auf den Levatorspalt.) Pankow.

July 24, No. 30, pp. 1041-1064

137 Instrument for Measuring the Diagonal Conjugate. C. Hoerder.
138 *Mishaps with Spinal Anesthesia. (Unglücksfälle bei Lumbalanästhesie.) J. Risch.

139 *Suprarenal Preparations in Gynecology, etc. (Zur Frage der reinen Verwendung von Nebennierenpräparaten.) M. Neu. Id. (Ueber die Anwendung des Suprarenins.) Braun.
140 Large Bilateral Dermoid Cystomas Removed without Interfering with Pregnancy. T. Petri.

138. **Mishaps with Spinal Anesthesia.**—Risch reports from Franqué's clinic at Giessen four threatening mishaps with spinal anesthesia out of the 315 cases in which this method has been employed since 1908. Two of the patients, women, were finally revived but the other two succumbed. In the first there was complete arrest of the respiration and in the second heart collapse, while in the fatal cases the heart action stopped abruptly and permanently. The women in these fatal cases were obese and had lost much blood; the heart in one was flabby and inclined to fatty degeneration while the cardiovascular system in the other seemed to be sound except for slight arteriosclerosis. The experiences at this clinic with spinal anesthesia in 14 cases of Cesarean section were gratifying, but the mishaps have convinced Franqué that spinal anesthesia must be restricted to certain specially adapted cases, and that complications on the part of the vascular system or anemia practically contraindicate it. Bier's latest report on spinal anesthesia states that we must reckon with one death to each 400 or 500 spinal anesthesias.

139. **Suprarenal Preparations in Gynecology and Spinal Anesthesia.**—The communications by Neu and Braun are in reply to the report of two fatalities mentioned in THE JOURNAL, July 31, page 423. Both insist that the suprarenal preparations should be used very much diluted as this reduces materially the toxic action even of the same dose. Neu further urges cautious estimation of the individual reaction in the given case and especially the exact state of the heart and vessels. He warns decidedly against intravenous injection, and emphasizes the necessity for extreme care in injecting the preparation where it might get into a vein. Braun insists that the vaginal portion of the uterus can be rendered anemic effectually and safely by injection of only 10 c.c. of 200 c.c. of salt solution containing merely 1 c.c. of the 1 per thousand solution of suprarenin—there is no need to use a stronger concentration.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 11, XXX, No. 82, pp. 857-872

141 Colloidal Metals in Treatment of Nephritis. G. Bassoni and G. Abbo.

July 15, No. 84, pp. 881-888

142 Intestinal Fauna of the Snail in Human Pathogenesis. (Dei protozoi intestinali della lumaca e una nuova petalomonas.) P. Barabaschi.

Policlinico, Rome

July, XVI, Surgical Section, No. 7, pp. 285-332

143 Single Incision for Gasserectomy, Resection of the Trigeminal Nerve and Ligation of the Middle Meningeal Artery. (Taglio unico per la resezione del ganglio di Gasser, della 2 e 3 branca del trigemino e per l'allacciatura del tronco della meningea media.) F. Mastrosimone.

Riforma Medica, Naples

July 26, XXV, No. 30, pp. 813-840

144 The Membrane of the Red Corpuscle. (Dimostrazione della membrana del corpusculo rosso.) G. Fusco.
145 Some Poisonous Plants from the Congo. (Sopra uno strychnos e sopra un veleno [Cipna apua] del Congo belga.) G. Vinci.

Nordiskt Mediciniskt Arkiv, Stockholm

XLI, Internal Medicine, No. 4. Last indexed April 17, p. 1303

146 *Acquired Heart Disease in Children. (Die erworbenen Herzerkrankungen des Kindesalters.) G. Forssner. Commenced in No. 3.
147 A Study of Uric Acid. J. P. Chrom. Commenced in No. 2.

146. **Acquired Heart Disease in Children.**—Forssner reports the ultimate outcome in 96 cases of heart disease, articular rheumatism and chorea in children, investigated from fifteen to twenty-two years later, out of a total of 116 cases. All this material is classified and tabulated under various headings, the long course of observation permitting several important conclusions. Acute pericarditis seems to develop very rarely in acute articular rheumatism if it does not make its appearance in the first few months. In 10 out of 11 cases of acute pericarditis at the beginning of the rheumatic affection, the heart was previously sound. In the 16 cases of acute pericarditis 2 of the patients died during the first attack and 9 after a subacute or chronic course, up to fifteen years in one instance. One patient recovered completely and the heart has been apparently sound for twenty-nine years since. In another group of 25 cases of a mild heart affection not one of the patients re-examined lately had completely normal heart. The trouble had been slight mitral insufficiency, free from pleural or lung complications which were frequent in the first group. In the 56 cases of articular rheumatism in children, no less than 31 have died of some heart affection, and 4 still present some severe cardiac defect; in 4 others a similar defect has developed since; in 5 a mild cardiac defect is manifest and in 5 others it is probable. In only 5 is the heart apparently normal at present. The prognosis of articular rheumatism in this respect seems to depend on whether a heart affection develops within the first few months or not. If complications on the part of the heart develop later they seem to be of a milder form. Only 4 of the 24 patients with chorea minor have succumbed to heart disease and only 2 present a serious cardiac defeat, 6 a mild one and in 7 the heart findings are apparently normal, while 2 have died of tuberculosis. In the 9 cases in which the children have had both chorea and acute articular rheumatism, 4 died of some heart affection, 2 have still a serious and 1 a slight cardiac defect, and one patient is apparently sound while another with objective findings is yet subjectively well.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

HISTORY OF NEW JERSEY STATE DENTAL SOCIETY. By Dr. A. Irwin, Camden, N. J., 1909. Paper.

JUBILÄUMS-JAHRBUCH DES "STEFANIE" ARMENKINDERSPITAL-VEREINES, BUDAPEST, FÜR 1908. Paper. Pp. 73.

THE TWENTY-EIGHTH ANNUAL REPORT OF THE NEWTON HOSPITAL CORPORATION, NEWTON, MASS., Feb. 1, 1909. Paper. Pp. 17.

TWENTIETH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF MEDICAL EXAMINERS OF TENNESSEE, 1909. By C. A. Abernathy, M.D., Secretary. Paper. Pp. 24.

A THEORY REGARDING THE ORIGIN OF CANCER. By C. E. Green. Cloth. Pp. 46, with illustrations. Second Edition. Price, 2 shillings net. London: William Green & Sons, 1909.

A CONSIDERATION OF THE INTRODUCTION OF SURGICAL ANESTHESIA. By William H. Welch, M.D., LL.D., Professor of Pathology, Johns Hopkins University, Baltimore. Paper. Pp. 24.

ASEPTIC SURGERY. By Charles Barrett Lockwood, F.R.C.S., Surgeon to St. Bartholomew's Hospital. Cloth. Pp. 275. Edition 3. Price, $1.50. New York: Oxford University Press, 1909.

CHILDREN IN HEALTH AND DISEASE. By David Forsyth, M.D., D.Sc., Physician to the Evelina Hospital for Sick Children. Cloth. Pp. 362. Price, $3. Philadelphia: P. Blakiston's Son, & Co., 1909.

HANDBUCH DER BIOCHEMIE DES MENSCHEN UND DER TIERE. Herausgegeben von Carl Oppenheimer in Berlin. Installment 19, with 7 illustrations. Price, 5 marks. Jena: Verlag von Gustav Fischer, 1909.

MÉMOIRE DE L'ASSOCIATION GÉNÉRALE DES MÉDECINS DE ROUMANIE RELATIF AU XVI CONGRÈS INTERNATIONAL DE MÉDECINE DE BUDAPEST. Bucarest: Ateliers graphiques Socec & Co., Société anonyme 1909.

ACCIDENT INSURANCE FOR WORKINGMEN. Reuben McKitrick. Comparative Legislation Bulletin No. 20, July, 1909. Prepared with the cooperation of the Political Science Department of the University of Wisconsin. Paper. Pp. 70.

WOMAN. A Treatise on the Normal and Pathologic Emotions of Feminine Love. By Bernard S. Talmey, M.D., Gynecologist to the Yorkville Hospital and Dispensary. Edition 5. Cloth. Pp. 260, with 23 drawings in text. Price, $3. New York: Practitioners' Publishing Co.

HINTS IN PRACTICAL URINALYSIS WITH ETIOLOGY AND SYMPTOMS OF SOME IMPORTANT GENITOURINARY DISEASES. Third Edition. By Charles C. Yarbrough, M.D., Therapist, Scientific Department, Frederick Stearns & Co. Paper. Pp. 77. Detroit, Mich.: Press of Frederick Stearns & Co.

A SYSTEM OF OPERATIVE SURGERY. By Various Authors. Edited by F. F. Burghard, M.S., F.R.C.S., Teacher of Operative Surgery in King's College, London. In Four Volumes. Vol. IV. Cloth. Pp. 686, with illustrations. Price, per set, $40; per vol., $10. New York: Oxford University Press, 1909.

MANUAL OF THE DISEASES OF THE EYE. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York. 1890-1903. Sixth Edition. Cloth. Pp. 391, with 362 illustrations. Price, $2 net. New York: Wm. Wood & Co., 1909.

MEDICAL JURISPRUDENCE, FORENSIC MEDICINE AND TOXICOLOGY. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Medical Jurisprudence, and Toxicology in Cornell University and Tracy C. Becker, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in University of Buffalo, with the collaboration of various authors. Second Edition. Cloth. Vol. III. Pp. 982, with illustrations. Price, $6 per vol. Sold by Subscription only. New York: William Wood & Co., 1909.